MARITIME HERITAGE MINNESOTA

CLEAN WATER LAND & LEGACY AMENDMENT

This project was made possible in part by the people of Minnesota through a grant funded by an appropriation to the Minnesota Historical Society from the Minnesota Arts and Cultural Heritage Fund.

MHM IS A 501(c)(3) NON-PROFIT CORPORATION DEDICATED TO THE DOCUMENTATION, CONSERVATION, AND PRESERVATION OF MINNESOTA'S FINITE MARITIME CULTURAL RESOURCES

Ann Merriman
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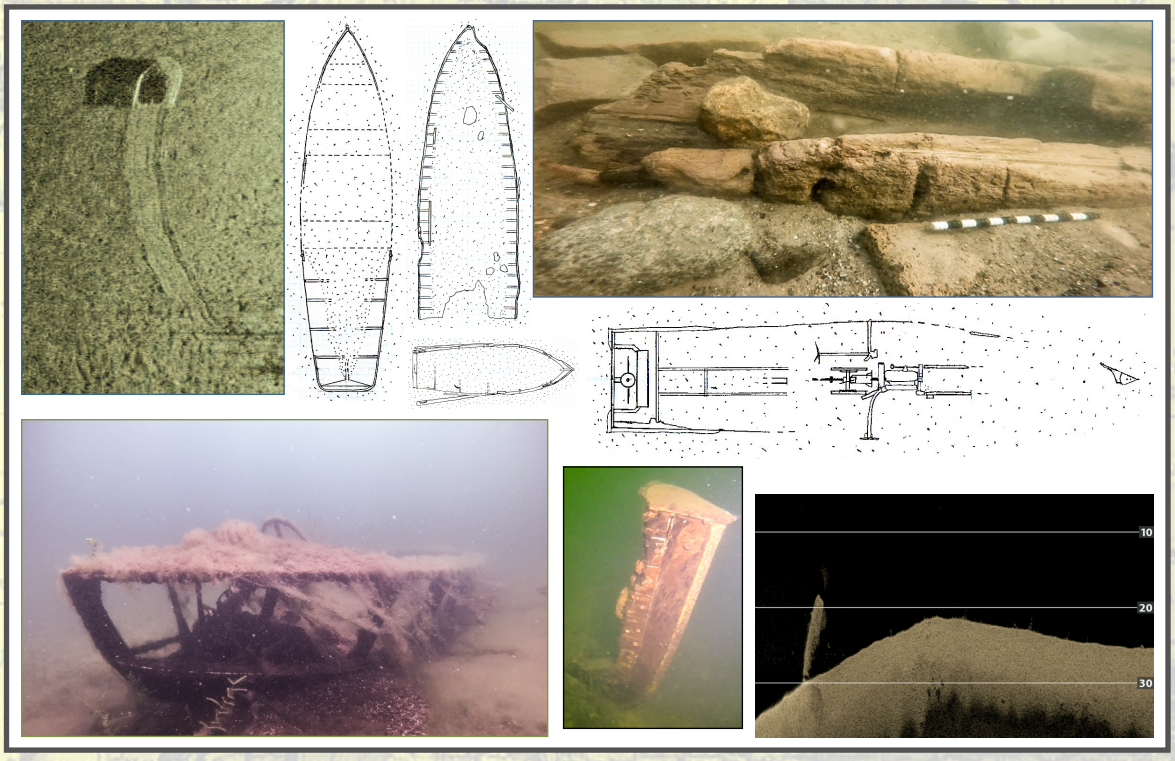
Minnesota Archaeology Licenses
20-012, 20-013, 21-048, 21-191

Lake Minnetonka Nautical Archaeology Project Series 10

Lake Minnetonka Underwater Archaeology Project: Anomaly Identification and Assessment Report



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Acknowledgments

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"ACHF grants have allowed a small St. Paul-based nonprofit, Maritime Heritage Minnesota (MHM), to re-establish the discipline of underwater archaeology in Minnesota. Without this support, MHM could not have conducted its groundbreaking nautical archeological and maritime historical research."

~Steve Elliott, Former Minnesota Historical Society CEO and Director, January 2015

Introduction

Wrecks and the artifacts associated with them tell a story. Removing or otherwise disturbing artifacts, treating them as commodities that can be sold, obliterates that story. Nautical archaeological and maritime sites are finite, and are significant submerged cultural resources. Nautical, maritime, underwater, maritime terrestrial – Maritime Heritage Minnesota's (MHM) deals with all of these types of sites throughout the State of Minnesota. MHM's Mission is to document, conserve, preserve, and when necessary, excavate these finite cultural resources where the welfare of the artifact is paramount. MHM is concerned with protecting our underwater and maritime sites – our shared Maritime History – for their own benefit in order for all Minnesotans to gain the knowledge that can be obtained through their study. MHM's study of wrecks does not include the removal of artifacts or damaging the sites in any way. MHM does not raise wrecks or 'hunt' for 'treasure'. Submerged archaeological sites in Minnesota are subject to the same State statues as terrestrial sites: the Minnesota Field Archaeology Act (1963), Minnesota Historic Sites Act (1965), the Minnesota Historic District Act (1971), and the Minnesota Private Cemeteries Act (1976) if human remains are associated with a submerged site. Further, the case of *State v. Bollenbach* (1954) and the Federal Abandoned Shipwrecks Act of 1987 provide additional jurisdictional considerations when determining State oversight and "ownership" of resources defined by law as archaeological sites (Marken, Ollendorf, Nunnally, and Anfinson 1997, 3-4). Therefore, just like terrestrial archaeologists working for the State or with contract firms, underwater archaeologists are required to have the necessary education, appropriate credentials, and hold valid licenses from the Office of the State Archaeologist (OSA).

MHM completed two side and down-imaging sonar surveys of Lake Minnetonka in September-November 2011 and May-June 2012 - the Lake Minnetonka Surveys 1 and 2 Projects (LMS-1, LMS-2). Prior to MHM's two comprehensive surveys, there was one recognized nautical archaeological site on the lake bottom and another five wrecks were known. MHM completed the Lake Minnetonka Nautical Archaeology 1-9 Projects between 2012-2019. At the beginning of the Lake Minnetonka Nautical Archeology 10 Project, "Lake Minnetonka Underwater Archaeology Project: Anomaly Identification and Assessment" (LMNA-10) in August 2020, there were 83 known wrecks (including the Lake Minnetonka North Arm Dugout Canoe removed from the lake in 1934) on the lake bottom. Additionally, 38 maritime sites/cultural resources, 1 doodlebug, 7 cars, 2 trucks, 4 snowmobiles, 31 'other' objects, 2 sunken bogs, 24 cut tree stumps/cut trees/complete trees, 41 boulders/rocks/groups of rocks, 1 very large geologic feature, and 109 false targets (vegetation, bottom contours) identified on the bottom of Lake Minnetonka.

All fieldwork images recorded by MHM, Greg Flanigan, Josh Knutson, and Kelly Nehowig.

Preface

During the LMNA-10 Project, that encompassed the field seasons of 2020 and 2021, MHM investigated 3 known wrecks and 37 unknown anomalies. Of these targets, the 3 wrecks and 36 anomalies were documented using SCUBA and 1 target was investigated using an ROV (Remotely Operated Vehicle). The fieldwork was conducted during August-September 2020 and May-September 2021.

Results of the Lake Minnetonka Underwater Archaeology Project: Anomaly Identification and Anomaly Assessment (LMNA-10)
Minnesota Archaeology Licenses 20-012, 20-013, 21-048, 21-191

Research Design

A goal of the LMNA-10 Project - in addition to identifying previously recorded anomalies on the lake bottom - was to conduct targeted side and down imaging sonar survey in shallow areas of the lake prior to seasonal vegetation growth. Re-investigating shallow areas using remote sensing - under conditions that differed from the original survey - has produced significant results. Without thick weeds to block the sonar beam from extending to the lake bottom or obscuring submerged cultural resources, MHM has been identifying a significant number of wrecks and sites in the shallow water. Additionally, MHM has been also re-surveying deeper sections of Lake Minnetonka using newer and improved sonar equipment as time allows. MHM determined which anomalies would be investigated from an analysis of sonar data recorded between 2011-2021. Each anomaly was assigned a number upon its recognition as a possible site.

The 37 anomalies examined using SCUBA during the LMNA-10 Project were A698, A741, A800, A807, A836, A854, A855, A856, A860, A862, A864, A869, A884, A885, A890, A892, A897, A898, A907, A908, A910, A916, A1000, A1010, A1022, A1023, A1024, A1026, A1035, A1037, A1038, A1039, A1052, A1053, A1056, A1057, and A1058. Additionally, MHM re-visited the Wooden Inboard Motor Boat Wreck site (21-HE-564, Anomaly 26.1), the Owens Cruiser Deluxe Wreck site (21-HE-565, Anomaly 55), and the Larson Game Warden Wreck (Anomaly 726) to answer archaeological questions. Using data accumulated from the fieldwork as a starting point, MHM conducted research to place newly recognized nautical archaeological sites and anomalies into their historical contexts. Minnesota Archaeological Site Forms were filed with the OSA when appropriate.

Methodology

The methodology used to identify and rudimentarily document underwater archaeological anomalies is straightforward. MHM used the GPS coordinates of a wreck or an anomaly - taken from the data imbedded in the sonar data - to drop a weighted diver down buoy near the target. The dive boat anchored a short distance away from the buoy and divers geared up for the dive. At any given time, there were between two and four divers underwater. If the buoy anchor weight landed near and sometimes on the anomaly or wreck, no search for the target was conducted. However, for a variety of

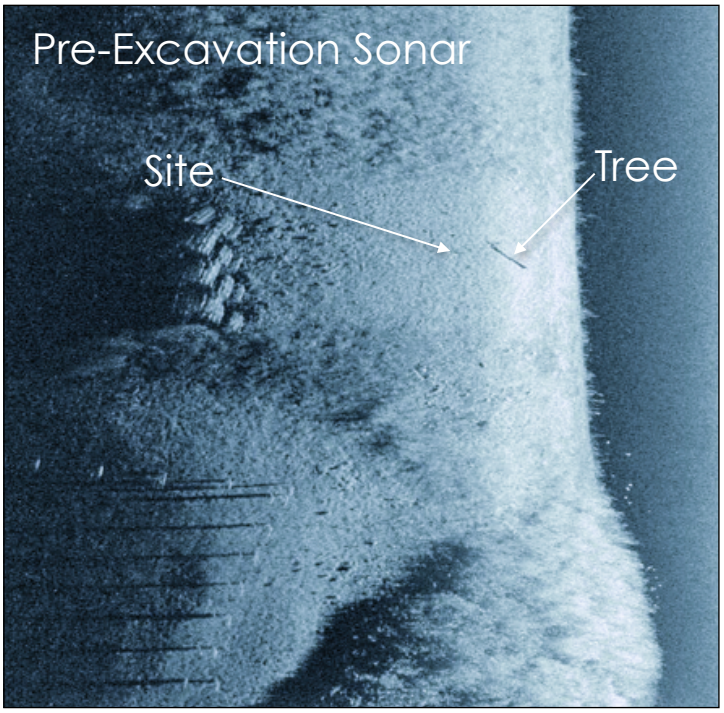
reasons, a brief search for the target was conducted until it was located or it was determined that the anomaly was a false sonar return. If a cultural or natural resource was located, the divers photographed and recorded video of the site or object, logged its basic measurements, examined any obvious attributes, and measured sediment build-up (if appropriate).

Results

After the completion of the LMNA-10 Project fieldwork in September 2021, there are now 94 identified wrecks on the bottom of Lake Minnetonka or that were once on the bottom, including a Woodland Culture dugout canoe removed from the lake in 1934. Of these wrecks, 62 of them have 61 Minnesota archaeological site numbers; 2 wrecks are features of one site. Further, 4 other types of maritime sites have archaeological site numbers and there are 39 maritime sites or objects without numbers. Additionally, 53 'other' objects have been identified that do not have site numbers, among them 13 vehicles that include 4 snowmobiles, 2 trucks, and 7 cars. During the LMNA-10 Project specifically – of the 37 unknown anomalies and 3 known wrecks investigated – MHM and its volunteers accumulated important data about the wrecks and confirmed the existence of 11 new wrecks, 4 new submerged maritime sites (2 of which are associated with other known archaeological sites), 3 ‘other’ objects, and 19 natural objects or false sonar returns.

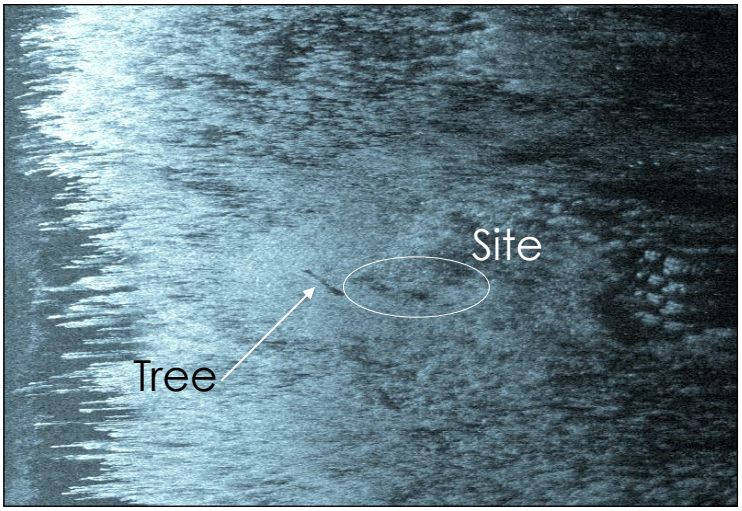
Dakota Unfinished Dugout Canoe Site, 21-HE-557 (Anomaly 1000)
Minnesota Archaeology License 21-191

The Dakota Unfinished Dugout Canoe Wreck (Anomaly1000), was located by MHM volunteer Kelly Nehowig in November 2020 during a sport dive; he recorded the anomaly by video and sent it to MHM. Upon reviewal, MHM immediately identified the object as a dugout canoe. MHM had recorded the area using sonar several times, but the nature of the site and the surrounding matrix comprised of gravel, rocks, and vegetation prohibited identification using remote sensing. MHM acquired Phase II License 21-191 from the OSA to excavate Anomaly 1000 in August and September 2021, conducting 6 days of fieldwork with the assistance of volunteers Kelly Nehowig and Josh Knutson. When located, part of Anomaly 1000 protruded from a mix of silt, sand, gravel, stones, and weeds. For purposes of this investigation, the exposed portion of Anomaly 1000 will be considered the 'bow'. One stone lying inside the hull is believed to be original to the site; Native Americans submerged dugout canoes in shallow water over Minnesota's winters to preserve them for use in the future. MHM conducted a simple excavation - manual removal by hand of the overlying matrix - of the remainder of Anomaly 1000. The unfinished 'stern' end of Anomaly 1000 had 4.00 feet of matrix above the log, primarily comprised of silt, sand, gravel, and field-type stones. Also within the matrix, 2.00-4.00 feet above the dugout canoe, three short 2 by 4s with nails in them and a clear bottle from 1947 were encountered. Between 2.00-3.00 feet above the artifact, pieces of cut coal were found. A small 3.00" medicine-type bottle, shards of broken glass, and partial fishing lures were strewn within the matrix and nearby on the bottom of the lake, along with rusted cans. A rusted 3-iron golf club was found on top of the gravel to the northwest of the canoe.



Pre-Excavation

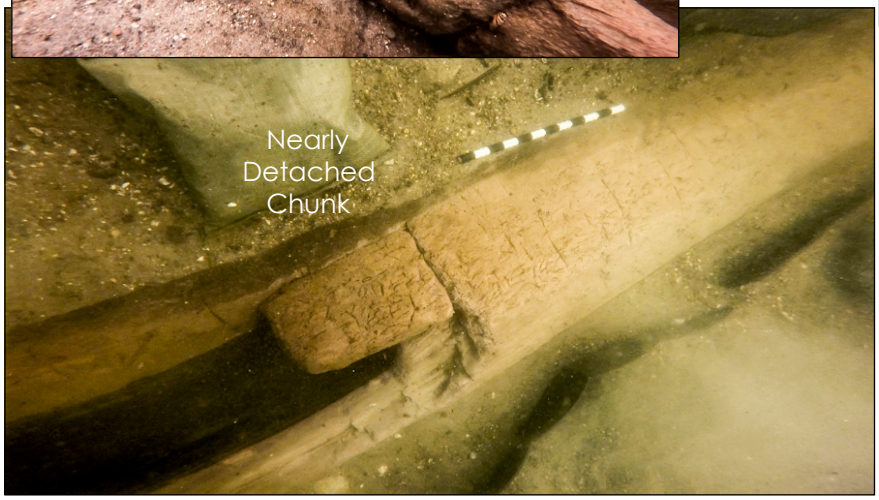
The dugout canoe is 9.40 feet long and 1.30 feet in diameter - and the artifact is unfinished. Prior to excavation, the exposed portion of the hull measured 3.00 feet and there is evidence of burning inside the canoe. Often, controlled fire was utilized to gut the center of logs for dugout production, and to round the ends by suspending the log over flames. Grooves in the hull mark areas where unneeded wood was removed from the log by a crosscut saw - either a 2-person type or bowed type - to create the hull. One chunk of wood has been cut on 4 sides but it is still attached to the log on its underside. This portion of the artifact provides a significant amount of information in relation to the vessel's construction. Beyond that point, the 'hull' no longer existed and the log is intact. The log section is marked with at least 6 score lines that would guide the canoe builder where to cut the wood to fashion the last 2/3 of the hull. All over the log section of Anomaly 1000, small irregular slashes are the tool marks created by the maker during the bark removal process. The log end retains evidence of the tree's felling; there are no saw marks but MHM contends an axe was used to cut a wedge on the 'port quarter' of the dugout to the point that it toppled under its own weight. Irregular marks 'along the centerline' and on the 'starboard quarter' of the unfinished end of the dugout suggests it snapped free from the tree stump and hit the ground. MHM inserted a rebar probe into the trunk part of the artifact and determined at least 3.00 feet of it was hollowed-out beyond the already-formed part of the canoe. At the 'bow', a large fishing lure is hanging from the dugout; MHM left the lure in place so as to not damage the artifact. Throughout the excavation, many feet of nylon fishing line were encountered in the matrix and on both sides of the canoe.

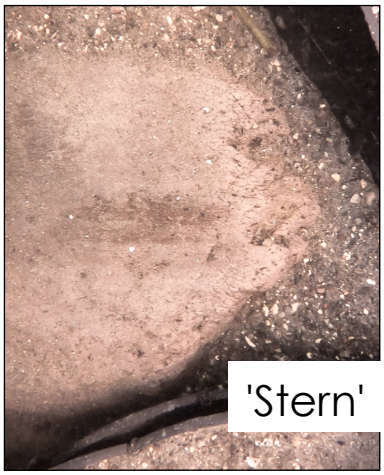


During Excavation

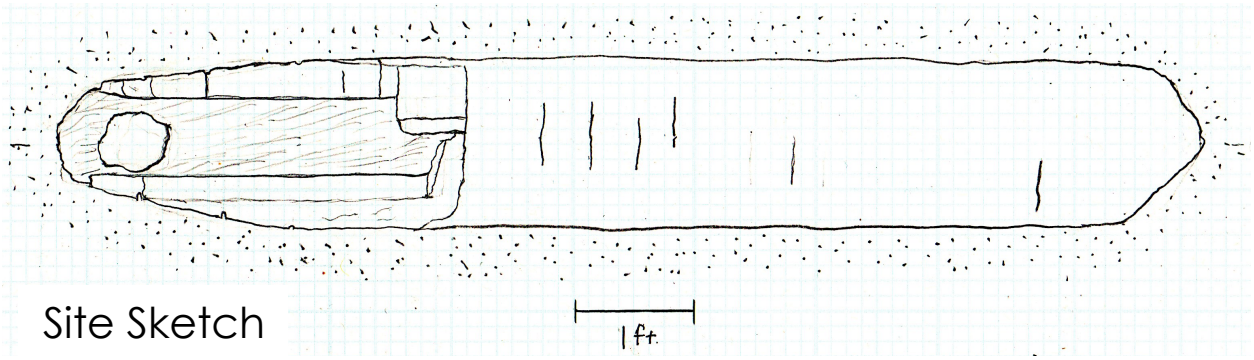
During Excavation

Score Lines





'Stern'



The bottom of the Dakota Unfinished Dugout Canoe Wreck is encased in clayish silt that is the lake bottom. The matrix covering the wreck is 'fill' that migrated over the hull over time, or was dumped on the site after being cleared from the shoreline. MHM contends the relative dating of the historic items in the matrix above the dugout canoe - while still is a probable jumble - can provide a baseline for the movement of the gravel and field-type stones over the site. Further, the lack of artifacts in the 2.00 feet of matrix directly above Anomaly 1000 suggests this section of gravel and stones moved onto the site through natural forces; the shallow nature of the wreck makes it vulnerable to heavy wave action at times. Also, MHM contends the 'bow' was uncovered by strong propellor washes that shifted the silt, sand, gravel, and stones during the last 2 or 3 decades. MHM took wood samples using a core borer for C14 analysis. The results indicate that a construction (tree felling) date range of 1683-1908, with a more narrow possible date range of 1802-1908. However, using additional relative dating, MHM contends this range can be further refined based on the construction date of near-by historic buildings that were located directly to the east of the site and the presence of coal in the matrix above the canoe. Beginning in 1880 with the construction of large buildings in the area, steamers regularly docked literally over the location of Anomaly 1000 and probably took on coal there, too - and possibly off-loaded coal for building boilers. Therefore, the date range can be further refined to 1802-1880. Additionally, the fact that the canoe is embedded in lake bottom clay suggests an earlier construction date than 1880, possibly prior to 1850 before the occupation of Lake Minnetonka by Europeans and their habit of dredging the lake bottom and the movement of spoil to different areas. Therefore, while it is possible the Dakota Unfinished Dugout Canoe Wreck was constructed as early as 1683, the C14 data and relative dating of the site more strongly supports a date range of 1802-1850. Wood typing of the dugout indicates it was fashioned out of a basswood tree, Tilia americana (Dr Ron Schirmers, personal communication, November 2021).

MHM placed the small medicine bottle, glass shards, and the golf club under a nearby tree on the lake bottom for their safety. The complete clear bottle and a coal sample, along with a statement from MHM on the dates this work was conducted, were placed in a waterproof bag and placed within the hull of the canoe. A barrier to prevent gravel migration onto the wreck was placed around the hull and log sections of Anomaly 1000 and left in place. Filled sandbags were molded around delicate areas of the dugout and other filled sandbags were placed on top of the hull and the log section, covering it entirely. If fishing lures, fishing line, propellor wash, or other objects come near the dugout canoe, the sandbags will prevent any further damage to the site. Additionally, if further archaeological work is required at the site, the artifact can be easily uncovered for study and re-covered for its protection.

Site Covered With Sand Bags

Post-Excavation

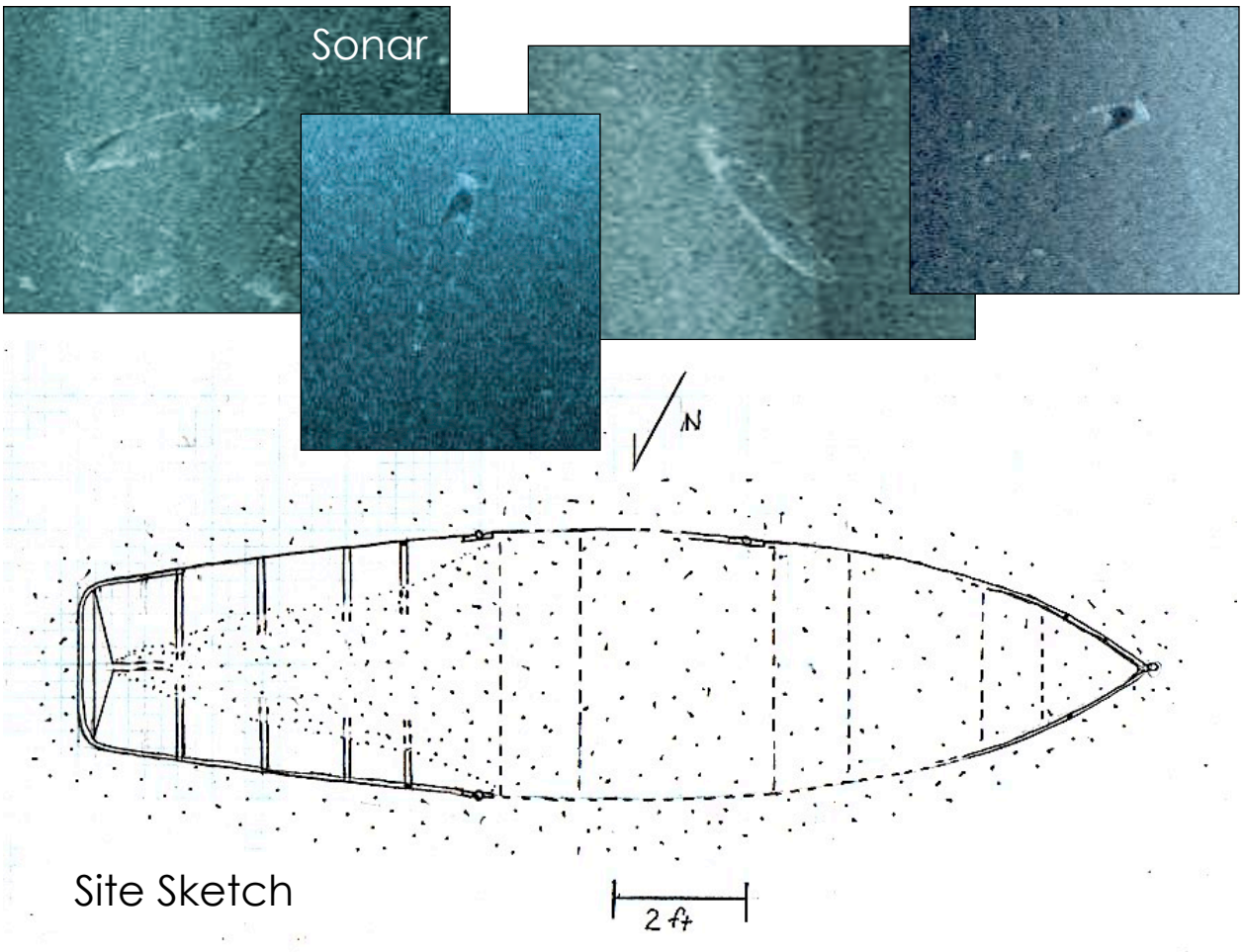
Photogrammetric Model of the Dakota Unfinished Dugout Canoe Wreck 21-HE-557

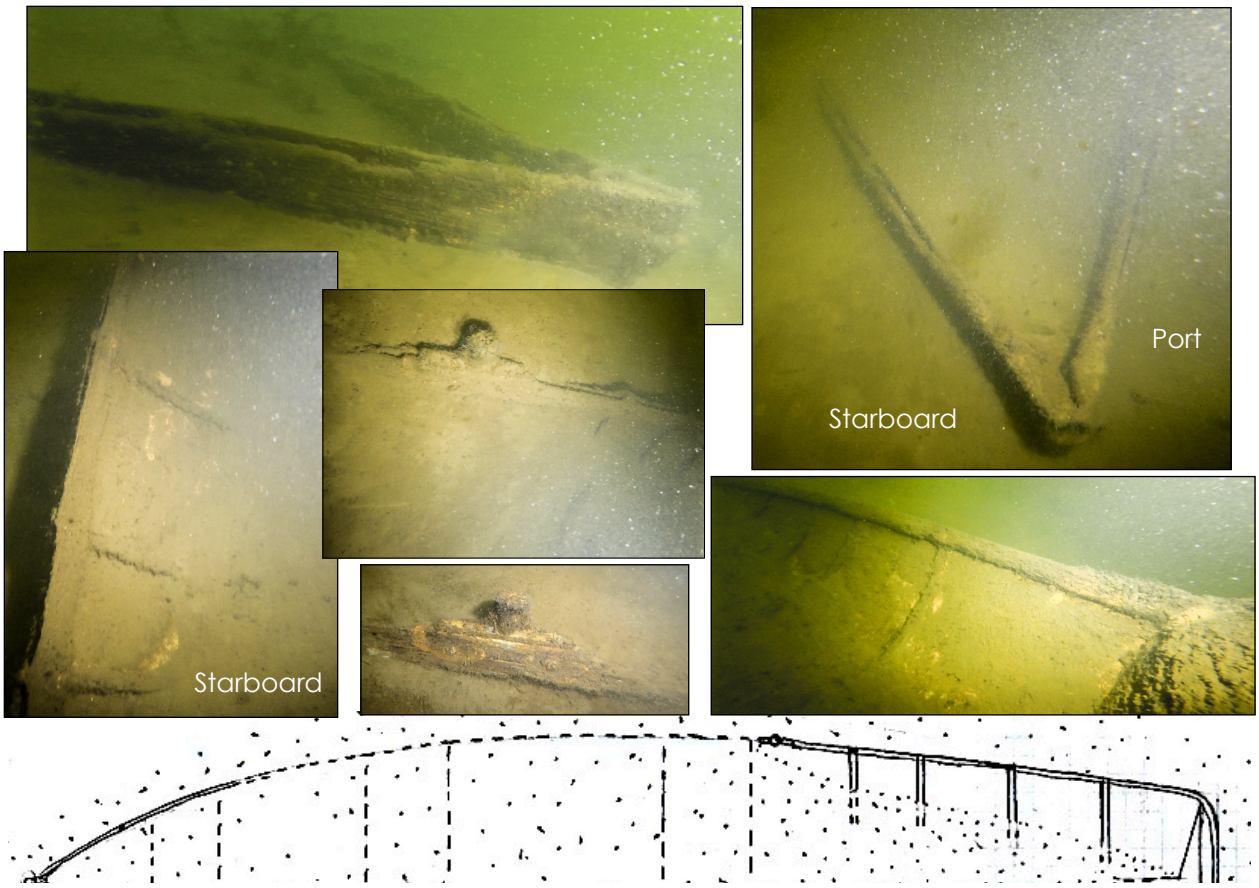
Sand Bag and Rock in Place to Support the Nearly Loose Chunk

MHM's ability to create 3D models of underwater sites has been made possible by a generous monetary donation from MHM friend Dr Natalie Rosen. The donation paid for Agisoft Metashape software and a high capability graphics computer.

Steel Wineglass Stern Wreck Site, 21-HE-561 (Anomaly 1023)

The Steel Wineglass Stern Wreck is 16.00 feet long, 4.00 feet in the beam, and 2.30 feet wide at the transom. The hull is nearly filled with silt but the majority of the gunwale is visible through the silt. Amidships on both sides, and a little further forward on the starboard side, the gunwale cannot be seen due to the slight sheer of the vessel. The bow is sharply pointed and upswept, with a large metal towing ring affixed to the stempost. The gunwale consists of the steel hull sandwiched between a wooden rubrail on the outer hull and a wooden stringer attached to the inner hull. Both beams are worn on their upper surfaces amidships but they are substantial. The stern is of the wineglass design, a type not commonly found in steel. The inner transom is composed of 3 sturdy wooden planks, and the outer transom is steel reinforced with a sternpost. The keelson is seen at the stern, disappearing in the silt after a few inches. Two sets of oarlocks were incorporated into the vessel's construction, but only 3 of them are visible; the starboard side forward oarlock is either buried or hasn't survived. Originally Anomaly 1023 had 2 steel or wood benches amidships that correspond with the oarlocks and 2 more benches fore and aft. The aft bench would have been trapezoidal, corresponding to the wineglass stern configuration. The thin metal frames are mostly covered in silt, but 4 sets of them are exposed on the starboard and port quarters. Fasteners cannot be seen clearly, but corrosion around the attachment points for the frames, stringer, and rubrail suggest either steel or iron rivets or slot-head screws. The outer hull is smooth, as opposed to some small steel boats that are faux lapstrake.




Port
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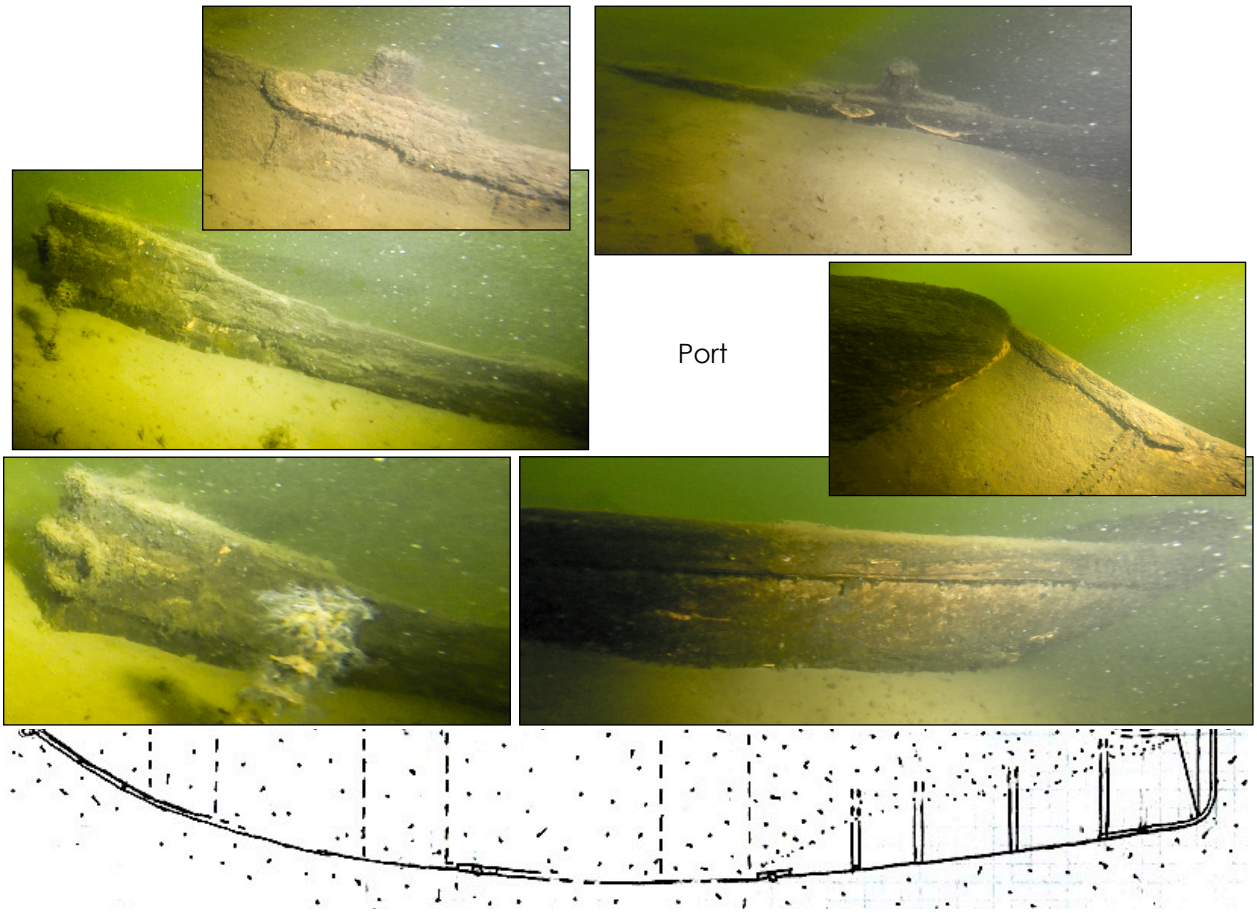

Port

Starboard Quarter and Transom

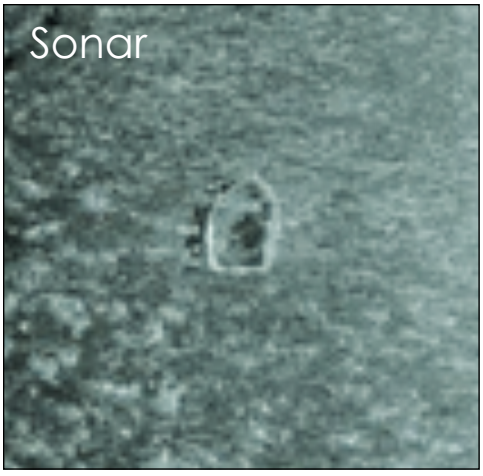
MHM contends the Steel Wineglass Stern Wreck was constructed around 1900 based on the wide design of the wineglass transom, as opposed to a finer, thinner construction that was employed after 1910. Due to her nearly buried nature, MHM suggests Anomaly 1023 sank around 1930. One of the earliest manufacturers of small steel boats was the W. H. Mullins Company of Salem, OH; prior to 1905, Mullins primarily constructed row boats. Also, Minnesota companies produced small steel boats in the early 20th Century including Pearson's of Duluth, the Minneapolis Steel Boat Company, O'Hara Brothers Boat Company, and the Sanderson Boat and Engine Company. Anomaly 1023 is only the second steel wineglass stern wreck identified in Minnesota; the other site is 21-WA-122 in Forest Lake in Washington County (Merriman and Olson 2021, 18-21).

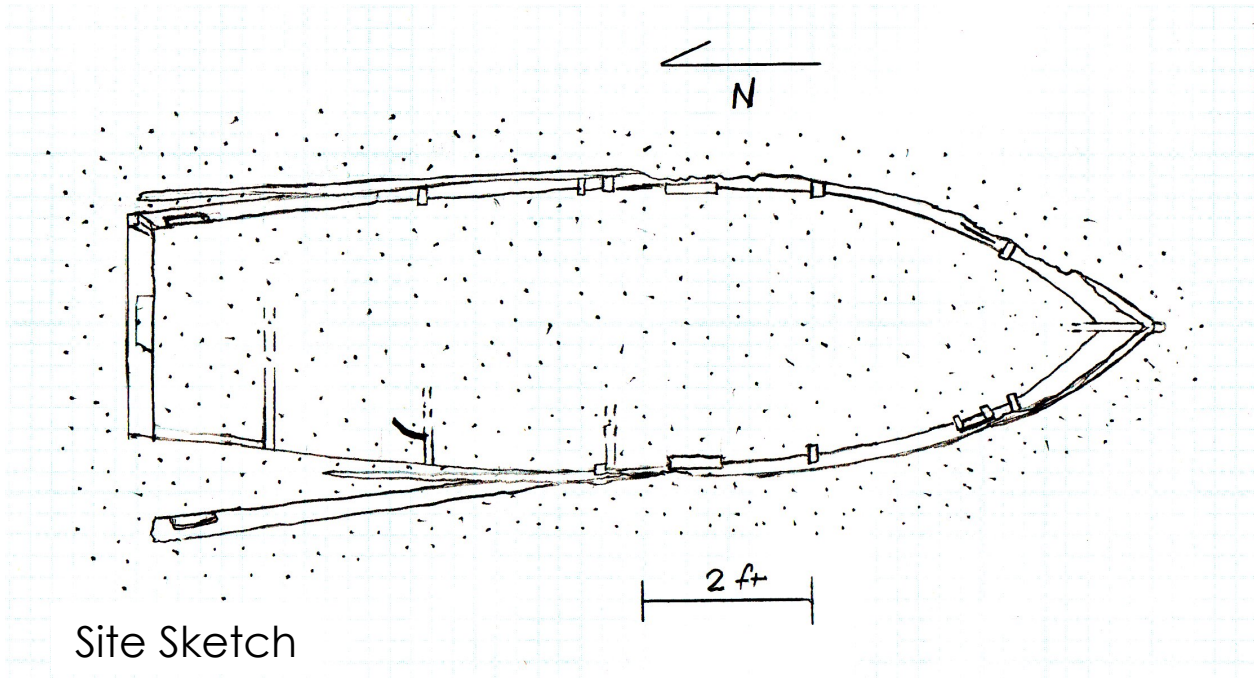
Boats similar to 21-HE-561, including an example from the Minneapolis Steel Boat Company (antiqueboatamerica.com; yachtsboatslist.com; *Minneapolis Tribune* 1904).

Homebuilt Wood and Steel Composite Wreck Site, 21-HE-562 (Anomaly 1022)

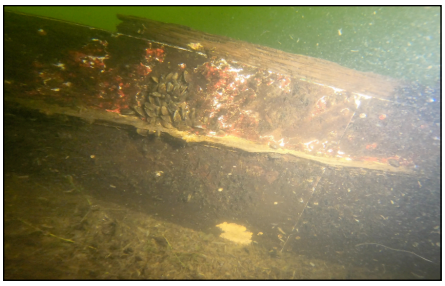
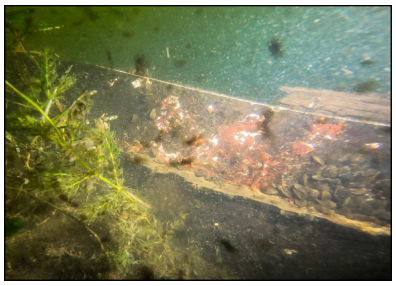
The Homebuilt Wood and Steel Composite Wreck is 12.00 feet long, 3.80 feet in the beam, and 2.70 feet wide at the transom. The hull is unique to Minnesota nautical and underwater archaeology, at least at this point in time. It was constructed of thin plywood, sheathed in thin steel, and the vessel is held together with wire nails - with the exception of wood screws protruding from the bottom of the hull where the starboard quarter has been wrench away (see below). The wreck has a hard shine and flat bottom; a box-like plywood inner hull that was relatively easy to construct. The outer steel sheets were painted primarily red, with traces of a probable white stripe and bits of underlying green and yellow in places. The pointed bow has a sturdy wooden stempost, visible inside the hull; it is sheathed in its own steel sheet metal on the outside with remnants of a towing loop attached through it into the wood beneath. The gunwale consists of the plywood inner hull and the outer steel hull topped with a wooden caprail, attached with nails. The stern never had a caprail, and in places, the caprail is missing, exposing the top of the plywood and the steel sheets. A wooden splashrail is attached to the outer hull, through the steel sheet into the plywood; it is nearly intact on the port side and buried in silt on the quarter and somewhat eroded on the starboard side. The stern has a rectangular transom comprised of thin slat strakes attached to the outer side of a steel sheet, with plywood attached on the inner surface - 'sandwiching' the steel. A fragmented motor board is attached to the plywood transom, with large heads of nails revealed on its

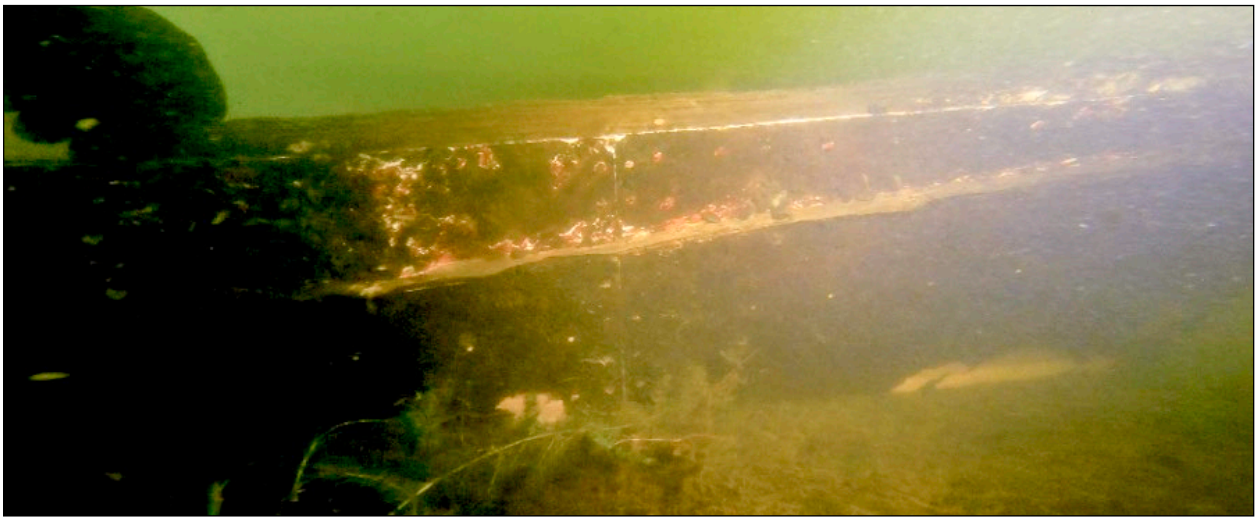
deteriorating surface. A simple gunwale-level brace helped stabilize the port quarter. The wreck has 5 rectangular frames spaced along the inner hull; the furthest aft 3 frames are matched with floors at the starboard quarter and amidships; the rest of the floors are covered in silt. Visible on the outer hull at the frame locations, flat-head nails in rows of 2 attach the steel sheathing through the plywood and into the frames. Remnants of metal bench braces survive on both port and starboard, as do wooden supports (a knee and rectangular pieces) for the amidships and aft benches; a small bench would have been located at the bow as well - a total of 3 missing benches. MHM documented the wreck first in late June 2021 and returned to the site in early August 2021. In June, the wreck was completely covered in zebra mussels and she was intact. At some point over the summer, nearly all the mussels were blown off the site along with a significant bit of silt. Unfortunately, the starboard quarter of the wreck was also damaged; the side and transom of the wreck have separated and the gunwale has sprung loose. The inside bottom of the hull is exposed at the damaged area, and wood screws can be seen protruding from the outer bottom of the hull; the screws held the starboard quarter plywood to the vessel's bottom.

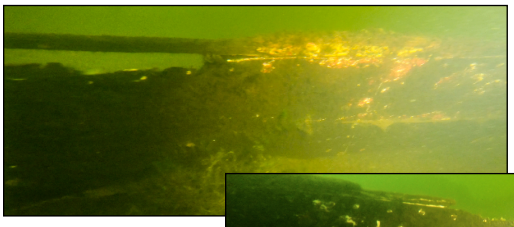
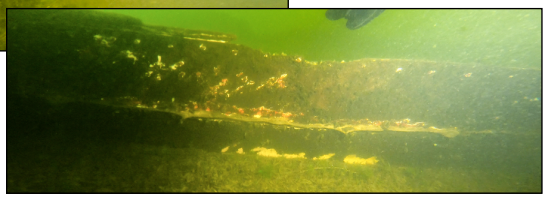




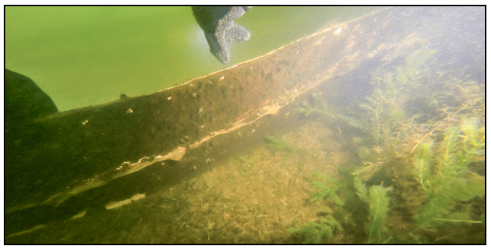
Site Sketch

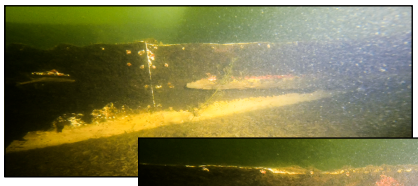
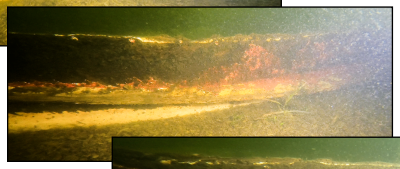
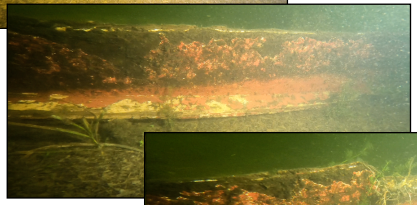
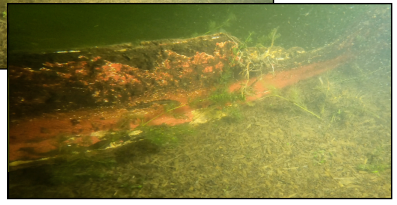





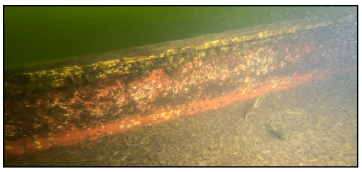
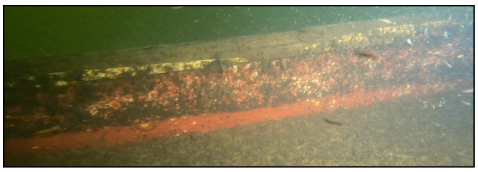
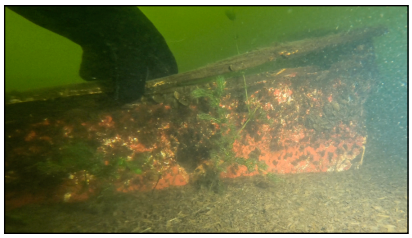



Starboard Gunwale and Splash Rail

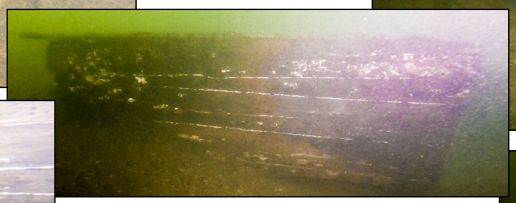
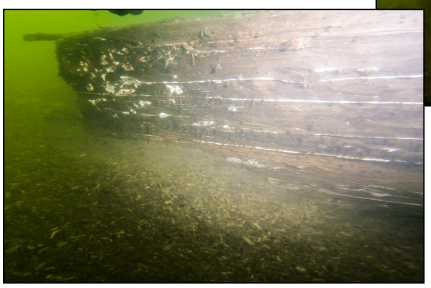
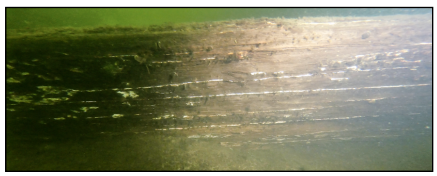
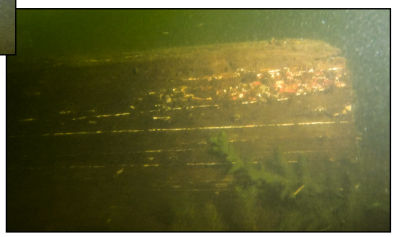


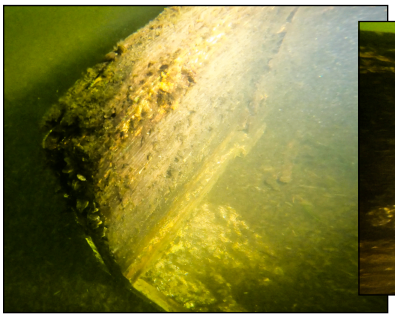





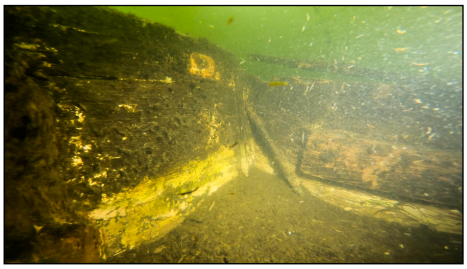
Port Gunwale and Splash Rail

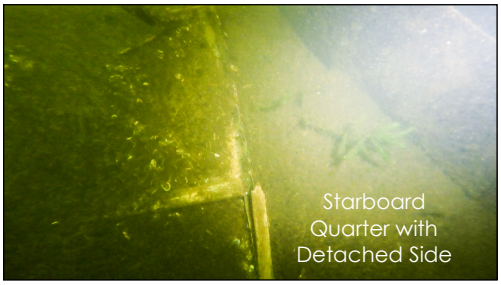




Port and Starboard Quarters and Transom

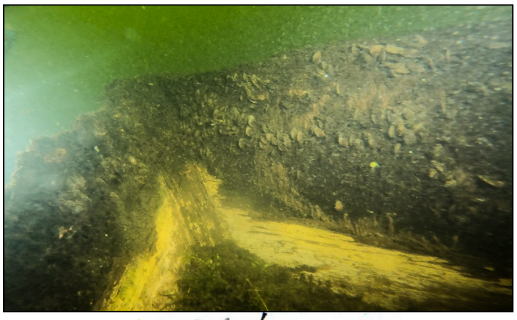





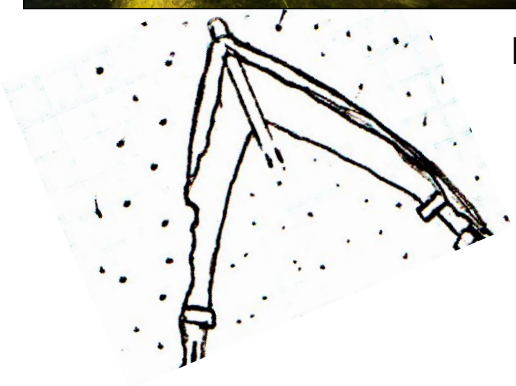






Inner Transom, Motor Board, and Frames





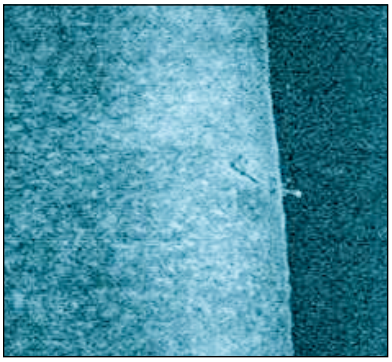
Inside Bow with Stempost

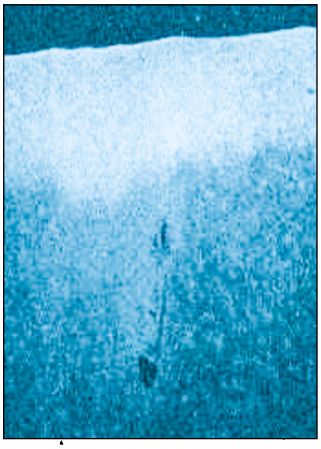
MHM contends the wreck was damaged by wake board boats that produce strong downward propeller wash that blew apart the starboard quarter of the Homebuilt Wood and Steel Composite Wreck. MHM has witnessed wake boats in the area every time fieldwork has been conducted in that part of Lake Minnetonka over the last 12 years. Wake boats regularly violate the 150-foot distance requirement from all displayed 'Diver Down' flags that MHM uses - as do other boats all over every lake. Other boats that traveled through the area where Anomaly 1022 lies, could also contribute to damage of the wreck site. MHM contends the A1022 was constructed around 1928, when the wider use of plywood to construct small boats began. The supposition that the wreck was homebuilt points to the simple design, including the flat-bottomed, hard-chained construction; the stern was put together like it was a box. Further, boats of this size during this time period, if they were fabricated by a commercial firm, would have been held together by slot-head wood screws, not wire nails. Anomaly 1022 likely sank around 1950, considering a 20-year lifespan for a wood and steel composite boat in Minnesota.

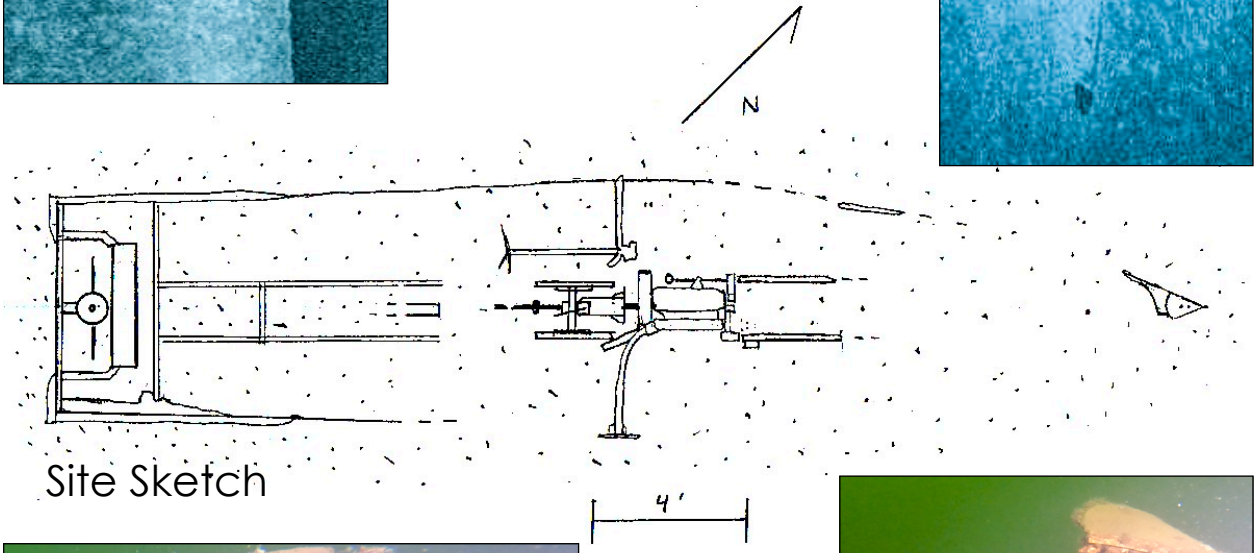
Fast Motor Boat Wreck Site, 21-HE-560 (Anomaly 1035)

Anomaly 1035, the Fast Motor Boat Wreck, burned to the waterline, just above the splashrail in the stern and at the turn of the bilge forward, with the exception of the transom and the stempost. From the stempost to the transom, the wreck is 30.40 feet long, she is 6.00 feet in the beam, and has a 5.80-foot wide transom. The stempost survives in its entirety, with a metal strip and small bow casting attached to the wooden post with slot-head wood screws. The casting is triangular with one rounded side, and a metal strap and loop is attached to the inner stempost below it. The loop might have been part of a forward internal truss system to prevent hogging. On both the port and starboard side of the stempost, small sections of slat strakes survive with white caulking between them. The stempost rises out of the bottom silt, and the bottom hull section in front of the engine is covered - probing has shown it has survived. Amidships, the port

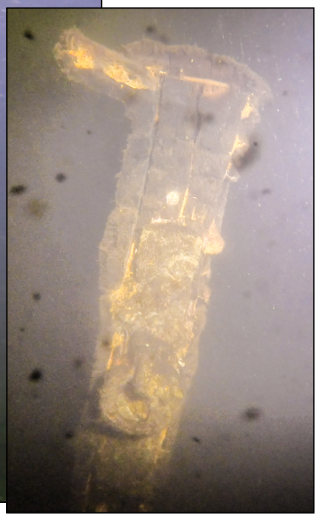
hull just at the turn of the bilge can be discerned, but moving aft, both sides of hull have surviving strakes, frames, and floors. The topmost sections of the strakes and frames show thorough burning and checking on both port and starboard quarters; the starboard side shows less burning than the port side. On both quarters, a substantial splashrail survives and extends around to the transom on both sides; this splashrail type (around the transom) has not been seen on any known Minnesota wreck identified to date. The transom is nearly intact, with just the amidships gunwale and port side upper strakes damaged; it is comprised of 3 large planks, with the widest example in the center.

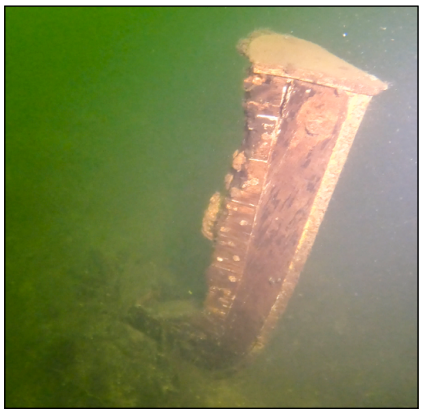






Stempost
and
Bow Casting





Starboard

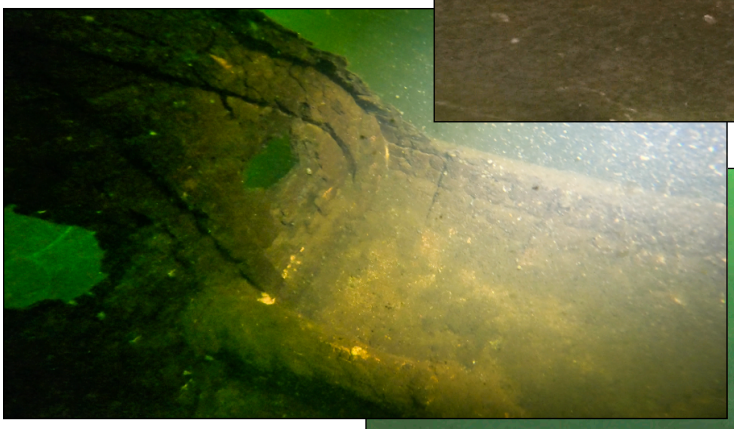
Starboard Quarter
and Transom

Starboard Burning

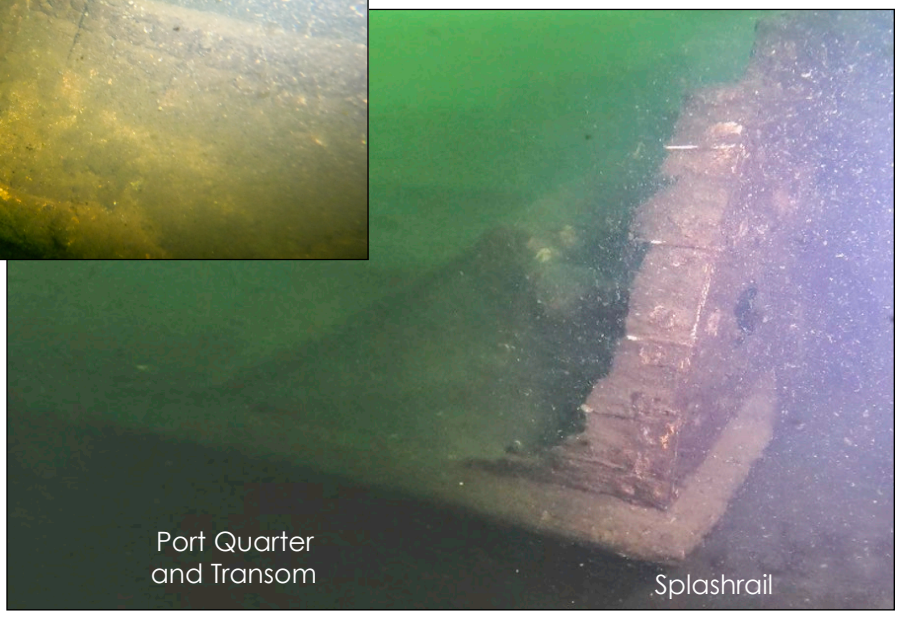
Stringers

Transom

Transom



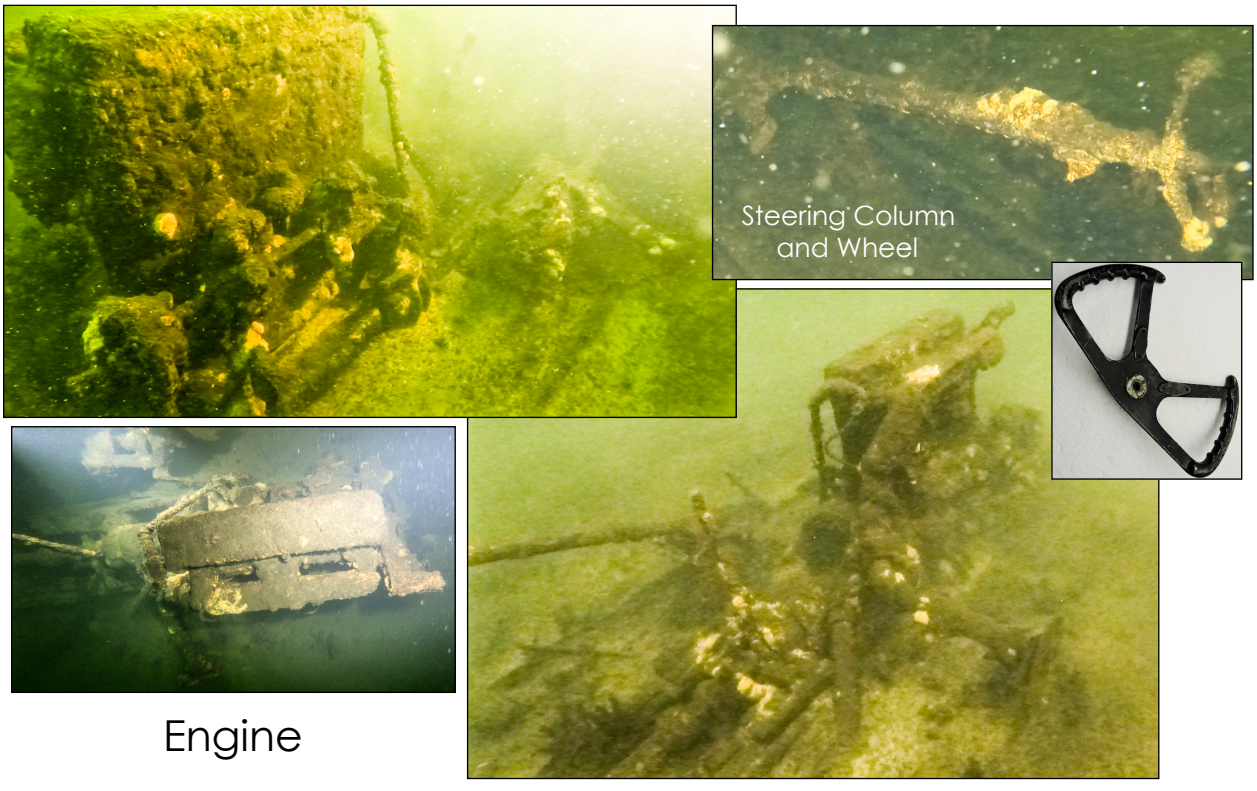
Port



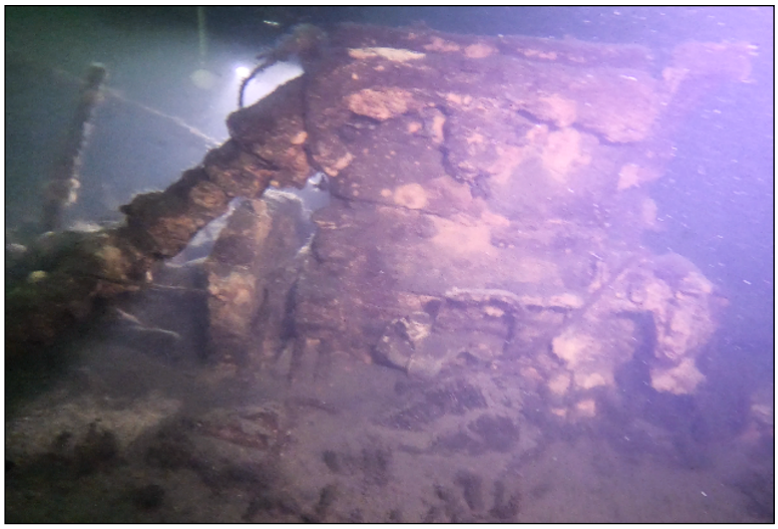
Port Quarter
and Transom

Splashrail

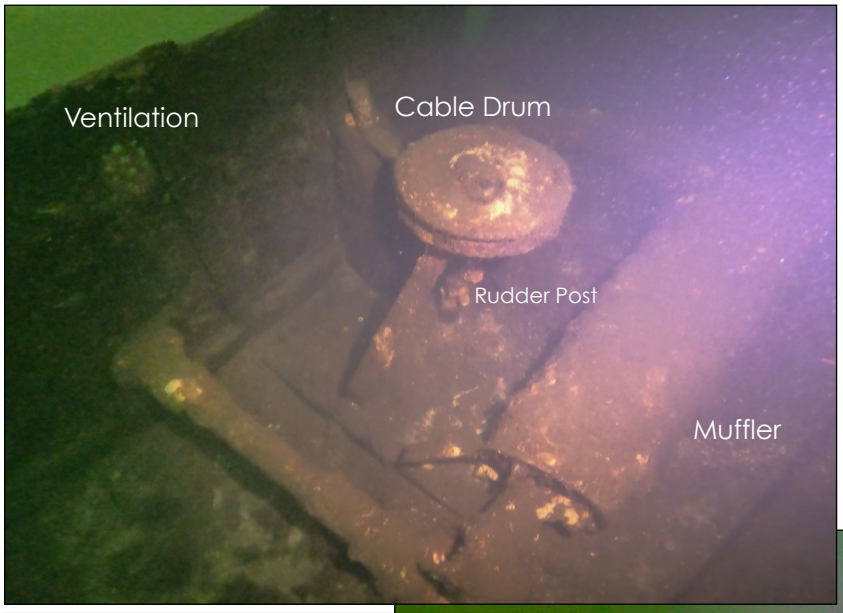
The 4-cylinder engine is amidships, attached to a large 'H' or 'ladder'-shaped mount that is secured to the wreck's bottom.The engine is very corroded, but several attributes are identifiable including the cylinder head, flywheel, driveshaft, clutch, clutch lever, cooling water manifold, cooling water intake and discharge pipes, an unattached carburetor, starter motor, battery cable, crankshaft sprocket and chain, electric starter, manual crank starter bracket, drive shaft, oil pump, and a capless distributor. To port, the steering mechanism is attached to the hull bottom stringers and the steering column extends aft into the water column. A partial steering wheel survives, and the remains indicate that the wheel is the 'aviator' type, a style sometimes used on early race boats. The engine mount - reminiscent of a set of stringers - extends nearly to the stern, stopping at the remains of an athwartships bulwark that signals the beginning of the rear deck area. Between the engine mount 'stringers', the propellor shaft is seen running from the rear end of the engine - with couplings visible; it disappears into the silt and into a conduit through the bottom of the vessel. To port, a metal battery platform survives but the battery did not. Behind surviving athwartships bulwark remnant toward the stern, the metal stern gear of the Fast Motor Boat Wreck survives, including a long muffler lying athwartships. Two exhaust pipes leave the muffler on both ends that are guided through the inner transom by 2 round flanged plates that act as stabilizers. Another 2 round flanged plates on the outer transom serve the same purpose. Above the starboard side flanged plate, a round metal screen is affixed over the round hole in the transom, allowing for ventilation; the port side example is missing along with the wood that held it in place. Between the muffler and the transom, the rudder post protrudes through the bottom of the hull, ending in a cable drum that would have had the steering cables wrapped around it, controlled by the steering wheel further forward. Behind the rudder post, an amidships wooden knee is affixed to the inner transom and the hull bottom. Even with a fragmented nature of the wreck, it can be determined that the hull had significant tumblehome from the quarters to the transom.

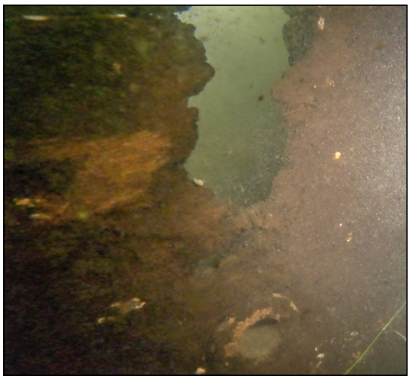


Engine

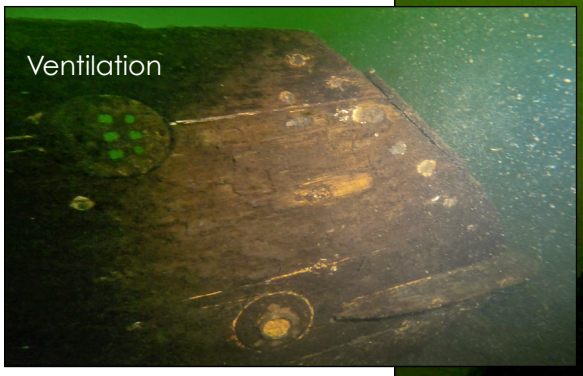


Engine

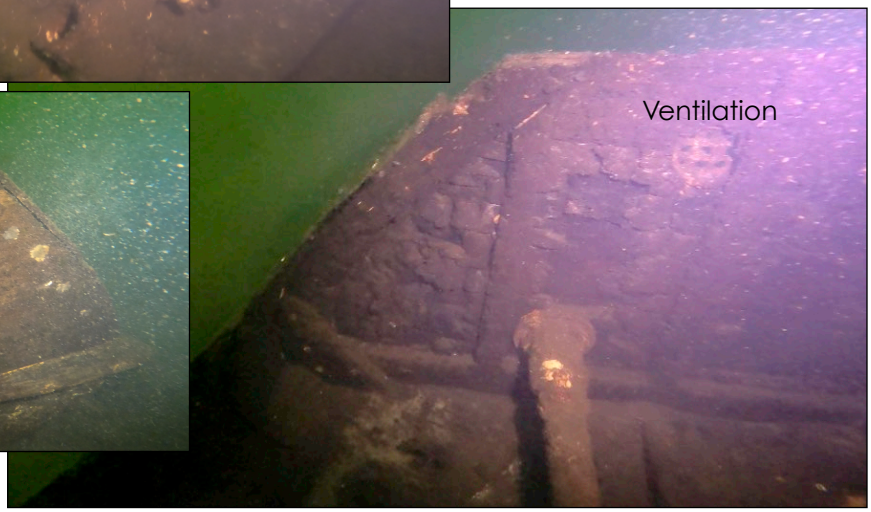


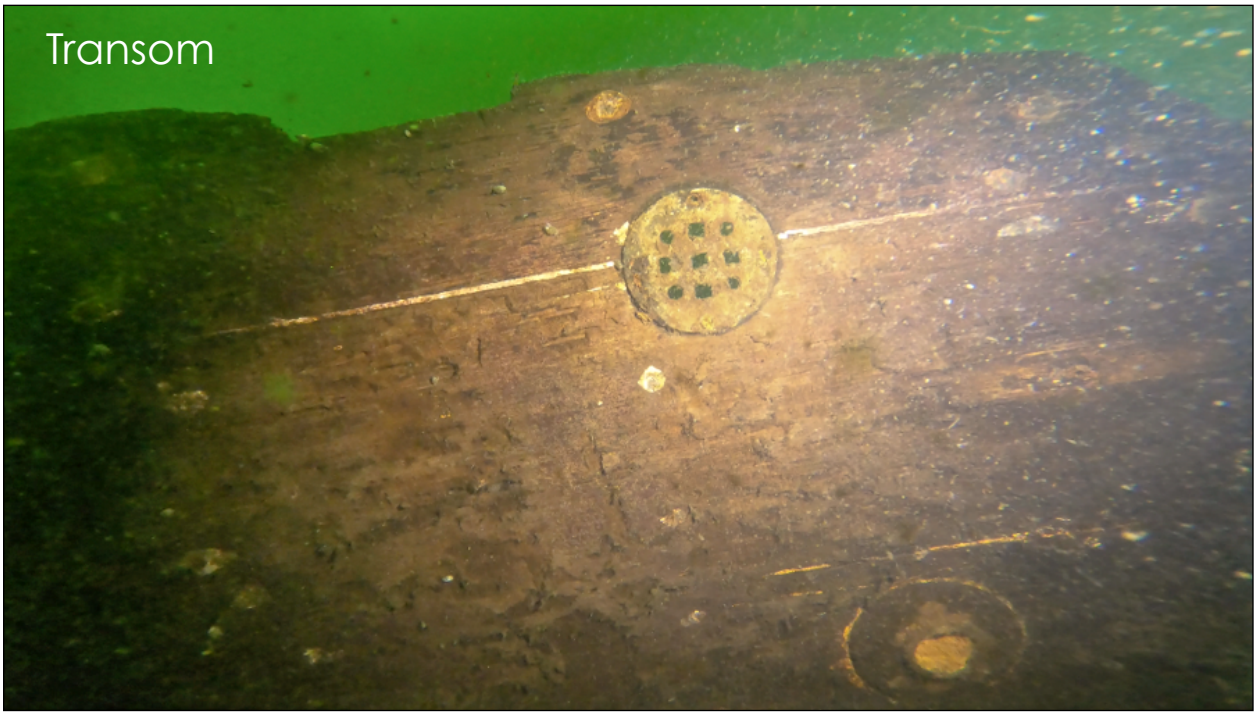


Stern Gear

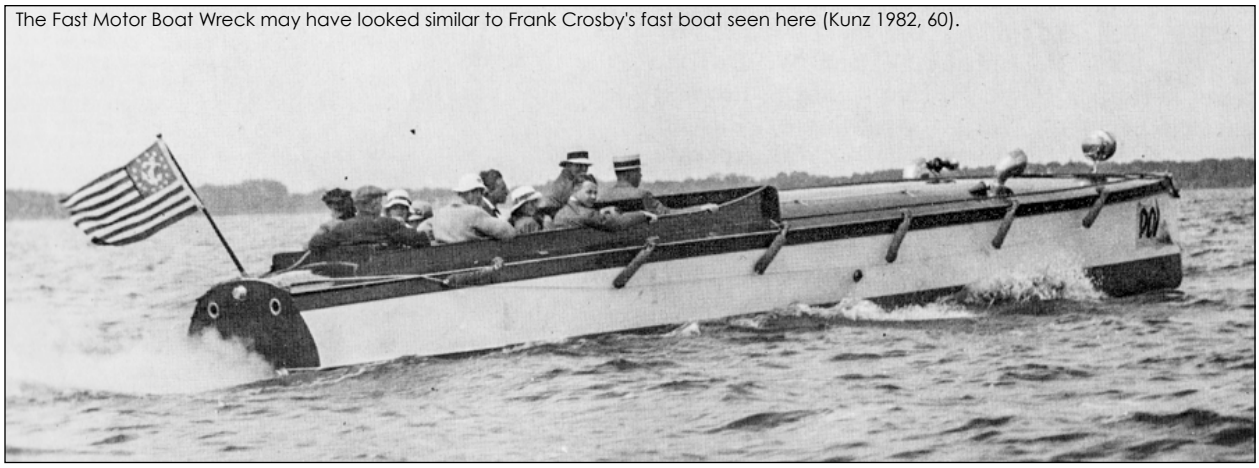


Exhaust Pipes and Ports





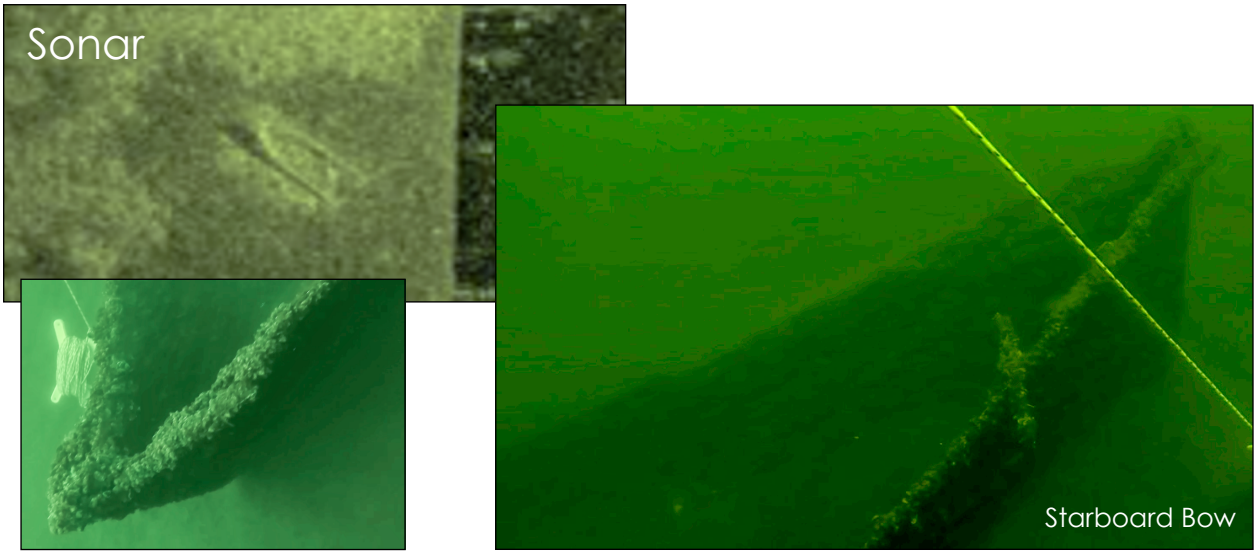
MHM has determined Anomaly 1035 was constructed around 1905 due to the probable design of the vessel, and the presence of a hand crank apparatus attached to the forward end of the engine. At some point during the working life of the Fast Motor Boat Wreck, she was converted from manual crank to an electric start. MHM contends the Fast Motor Boat Wreck's gas tank, located at the bow, exploded and blew the much of the bow compartment apart, while the hull amidships and aft caught fire. From the burning pattern, it is apparent that the forward section of the hull - after bearing the brunt of the explosion - burned to the waterline. Amidships, the hull burned to the waterline and aft, the hull stopped burning above the splashrail, and the transom is nearly intact - while the aft deck and the top of the transom burned. MHM asserts that transom, that is significantly scorched on its inner surface, survived nearly intact because it is thicker than other strakes and it was the first portion of the vessel to sink. The stern area had the weight of the muffler and rudder gear, along with the amidships weight of the engine and its associated equipment. The wreck sank stern first and the water extinguished the fire on both quarters, allowing more strakes and the splashrail to survive. The area fore of the engine was above the water longer, and therefore burned to the waterline and even slightly below the waterline at the bow. The thickness of the stempost and its metal sheath, combined with the bow strakes attached on both sides created a thick mass that did not burn before the wreck sank. MHM has located a number of historical references to watercraft explosions on Lake Minnetonka in the early 20th Century. To date, none of these reports have sufficient details for MHM to determine that they are referring to Anomaly 1035. MHM is confident the wreck sank between 1920 and 1935 based on the age of the vessel, assuming construction around 1905, and the amount of silt in the hull bottom. Water flows through the wreck site quickly and most of the silt in the water column remains in suspension, not being deposited on the wreck. Other nearby sites of a similar age (Ramaley Family Motor Boat Wreck [21-HE-490], Wooden Trunk Cabin Cruiser Wreck [21-HE-446]) are in similar conditions with little silt build-up.

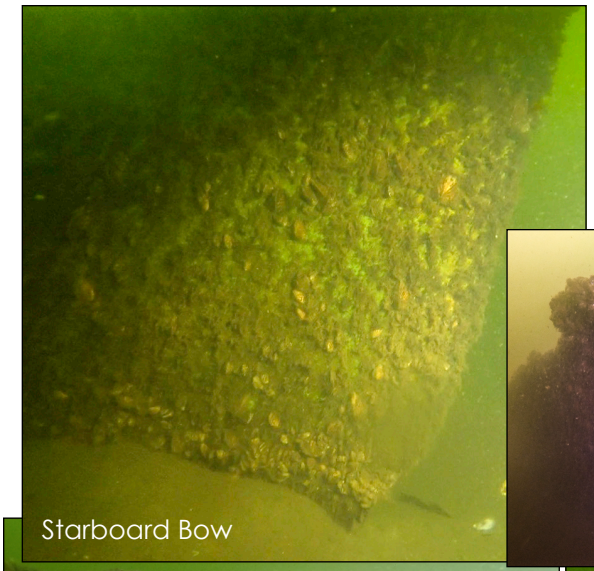


The Fast Motor Boat Wreck may have looked similar to Frank Crosby's fast boat seen here (Kunz 1982, 60).

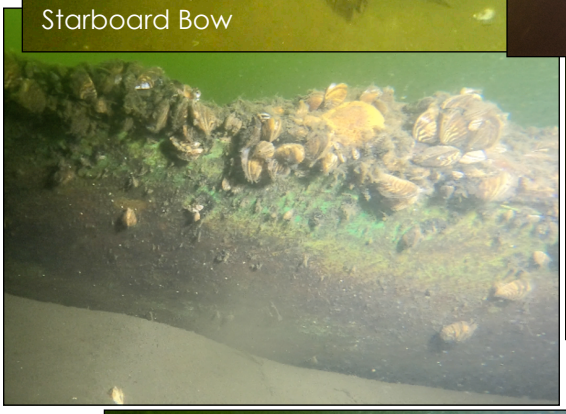
Wooden Transomless Wreck Site, 21-HE-556 (Anomaly 1057)

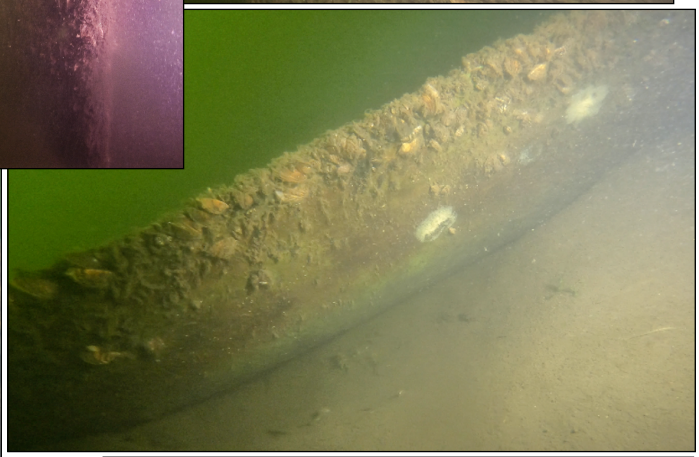
Anomaly 1057, the Wooden Transomless Wreck site, is 10.50 feet long and 3.70 feet in the beam. The wreck is carvel-built with a sharply pointed bow with a sturdy stempost; her square transom is missing, along with a portion of the bottom of the hull at the stern. Because of the missing section of the hull bottom, the wreck's skeg is visible when looking toward the starboard quarter at an angle. The boat could have carried a small outboard motor and could easily have been rowed by one or two people. The wreck has a soft chine at the burn of the bilge, suggesting the vessel had a broad, flat bottom when intact. The wreck's port side gunwale is partially intact, with a caprail surviving amidships and aft, along with 1 oarlock; on the starboard side small sections of caprail are discernible. The vessel has thin slat strakes with somewhat widely-spaced flat thin frames; a port stringer is visible along the inner hull for longitudinal strength. The starboard side stringer is either buried or not extant. The outer hull is painted a vibrant green color and the inner hull is painted white under layers of yellow and green. When constructed, the vessel had thwarts that acted as seats and athwartships supports that are no longer extant. The wreck is splayed-out due to the absence of the transom, resulting in a wider beam than it had when built. The wreck sits on top of the silt at the bow but it is more buried amidships and aft; a few inches of sediment fills the hull.

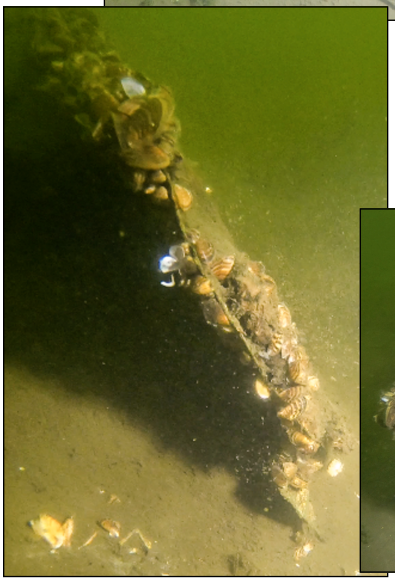




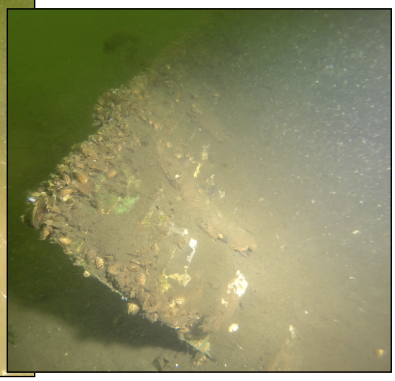
Stempost

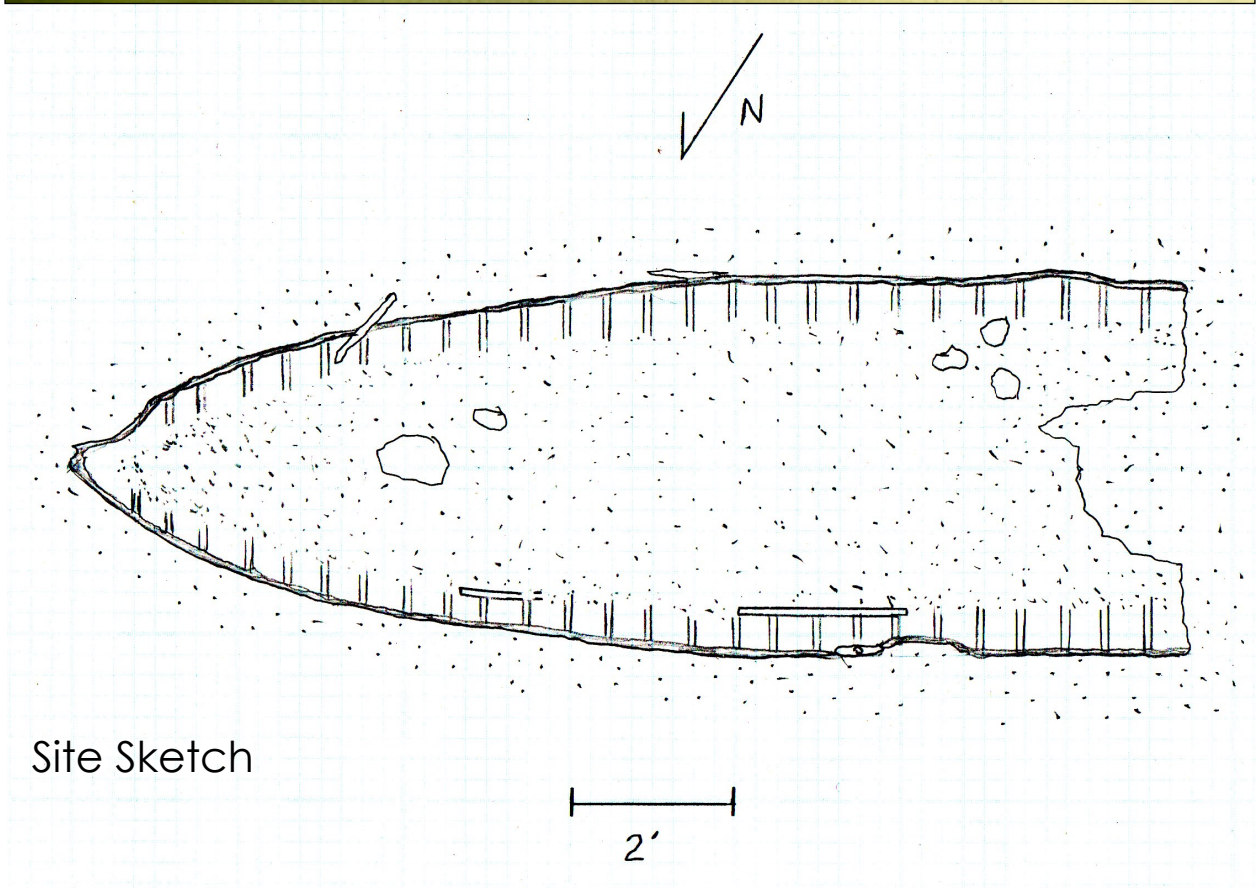






Port Quarter





MHM contends Anomaly 1057 was constructed in late 1910s-early 1920s based on the widely-spaced, flat frames incorporated into the vessel's design, and the use of nails to hold her together. The use of standardized flathead wood screws was common by the 1880s, so the use of nails in this wreck's construction suggests she may have been a homebuild, or at least she wasn't intended for strenuous use. Additionally, Phillips head screws were developed in 1936, and their use in boat construction became common in the 1940s-1950s. Small wooden boats with square transoms constructed later in the 20th Century featured tightly-spaced thicker frames that have been recorded in several wrecks on the bottom of Lake Minnetonka and in boats in Minnesota's museum collections. MHM also believes this small wooden boat was in use for 15-20 years

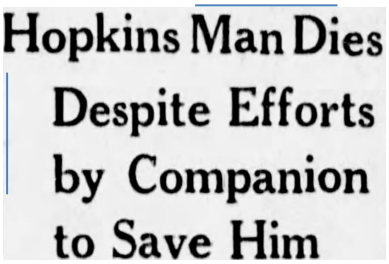
based on the profuse amount of thick layers of paint found on both the inner and outer hull. Therefore, the Wooden Transomless Wreck sank during the 1940s - likely scuttled using rocks to weigh her down - 10-15 years before boat registrations in Minnesota were required by law.

Wooden Inboard Motor Boat Wreck Site, 21-HE-564 (Anomaly 26.1)

The Wooden Inboard Motor Boat Wreck (Anomaly 26.1) sank on June 21, 1953, during a weekend that recorded a total of 8 drownings in Minnesota. The boat was owned by an Excelsior man whose friend, who lived in Hopkins, drowned during this boating incident despite the efforts of his friend to save him. Both men were in their mid-20s and were boating from Excelsior to Wayzata when the inboard motor quit - and one report stated the watercraft hit an obstruction. They shifted their position within the boat and the vessel went down quickly. Weighed down by heavy motorcycle boots, both men struggled, with the stronger swimmer helping the other man, but in about 10 minutes the weaker man sank into the lake. A passing cruiser spotted the surviver and brought him on-board where he collapsed in exhaustion; he was taken to the Minnetonka Yacht Club for treatment. Authorities dragged Lake Minnetonka for the drowned man's body and by June 24, it still had not been found. The young man was married with 2 small children (*Minneapolis Star* 1953; *Minneapolis Morning Tribune* 1953; *Minneapolis Sunday Tribune* 1953; *Minnetonka Record* 1953).

6 Drown in Area;
Hopkins Man, 24,
Missing in 'Tonka

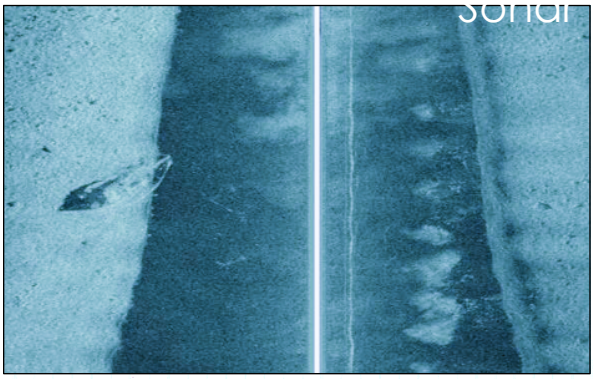
(*Minneapolis Morning Tribune 1953; Minneapolis Star 1953*)

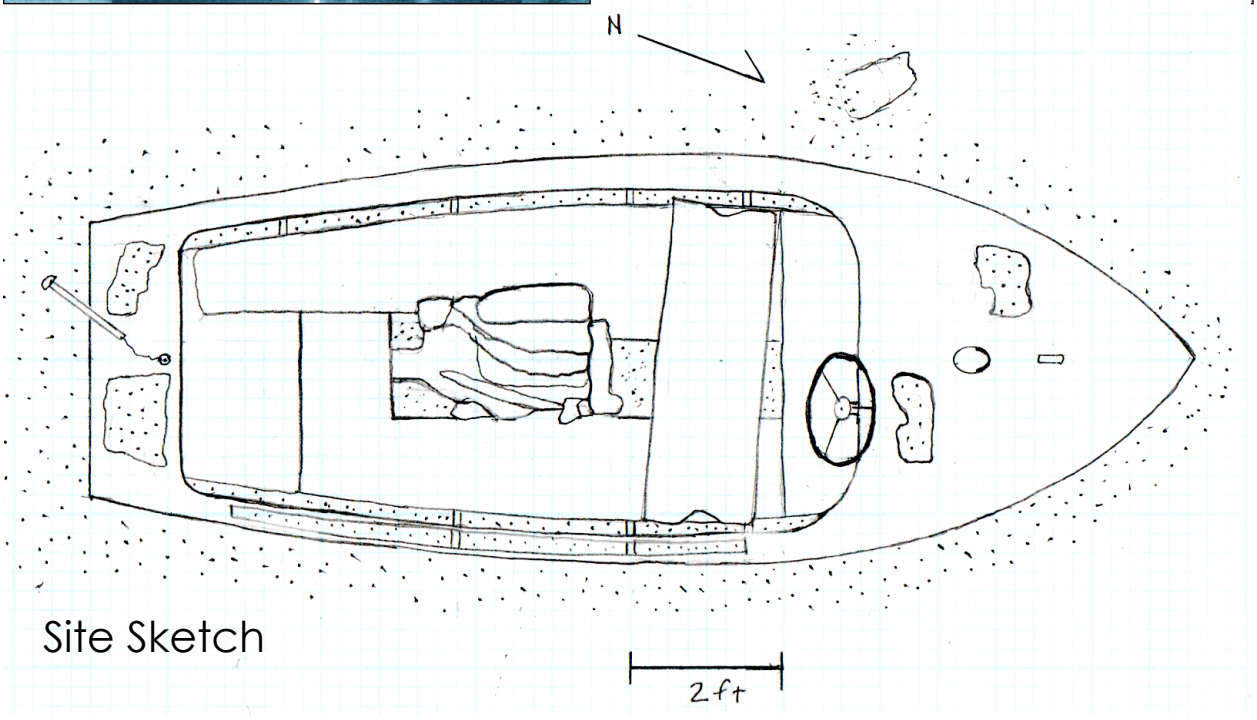

Hopkins Man Dies
Despite Efforts
by Companion
to Save Him

The wreck survivor.

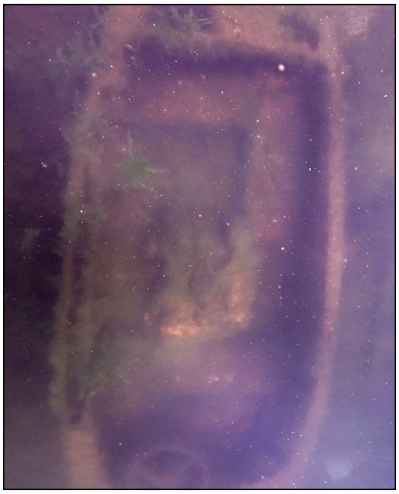
Anomaly 26.1 is 14.00 feet long, is 5.30 feet in the beam amidships, and has a 3.60 feet wide transom. The stempost is intact and it has a protective metal strip running along its length. Remnants of hull strakes are extant long the length of the stempost; they are particularly clear at the turn of the bilge and were secured with slot-head wood screws. Red anti-fouling paint survives on the wreck's bottom, visible at the port bow. The starboard and port splashrails are intact along the entire hull, regardless of the missing hull strakes. The foredeck is comprised of fore-and-aft deck planks; it has 2 large holes, a navigation light is attached near the centerline, a lifting ring is forward of the light, and at least one gauge with a glass face survives in the dash. The steering wheel is in place, and under the bow deck - held up by deck beams and a stanchion - the steering shaft and cables are present. Additionally, a slightly-curved wood or metal piece is

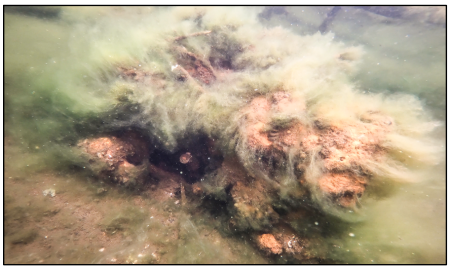
propped up by wooden knees; apparently this small bulwark prevented the pilot and front seat passenger from kicking steering and electrical lines. The windshield is dislodged from the hull, lying in the silt on the port side of the wreck off the bow. The amount of silt on the windshield changes year-by-year; in the past, it as been completely uncovered. The gunwale is intact throughout the wreck with an outer rubrail and inner stringer, although the caprail is missing on the starboard side and much of the aft deck is missing. The aft damage has progressed over the years; MHM has periodically dove on this site since 2016, when the port side deck was nearly intact, while the deck beam holding it up is still sturdy. Once entirely covered by the aft deck, the space at the transom is occupied by 2 exhaust pipes and the remnants of the gas tank. A mast light is lying on the aft deck, still attached to the wreck by its wiring, and a lifting ring identical to the foredeck examples remains in place. Even with the fragmented nature of the wreck - particularly the loss of most of the strakes - it can be determined that the hull had significant tumblehome from the quarters to the fully intact transom. Because of the missing strakes on both port and starboard, the wreck's frames are seen supporting the gunwale's stringers, rubrails, and caprails; originally A26.1 had 6 frames per side, with the starboard quarter example dislodged and lying inside the hull. A section of inner hull decking is gone, exposing a portion of the wreck's bilge aft of the engine. The doghouse is gone, but the engine - probably an in-line 4 cylinder - is intact.

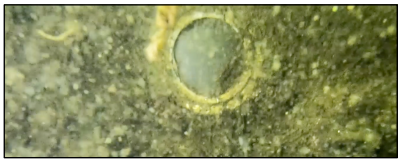




Site Sketch







VARIOUS SITE DETAILS

Underdeck Wiring.Cables
Steering Wheel and Dash
Engine
Transom

The site is affected by the seasonal growth of vegetation and the amount of zebra mussels attached to the wreck varies from year to year. MHM contends that the wreck is greatly affected by propeller wash due to the shallow nature of the site, and the zebra mussel infestation can be dependent on the power of the wash. Further, a fish nest is located at the transom on the port side; in previous years, a fish nest was seen at the bow. MHM has determined that the Wooden Inboard Motor Boat Wreck was constructed in the 1920s due to the use of slot-head wood screws as opposed to Phillips-head examples. Phillips-head screws were commonly used in boat construction after 1936. MHM's assertion that Anomaly 26.1 is the boat that sank on June 21, 1953, is based on the age of the hull as determined by construction date and the story related through newspaper accounts. The wreck is located at the spot written about in the articles, and the description of the boat simply stopping and sinking, possibly hitting an obstruction, fits the condition of the wreck. Further, it was reported that on the night of the sinking, an attempt was made by Hennepin County Deputies and the Excelsior and Deephaven Fire Departments to raise the wreck, after snagging her with grapples. However, the grapples let loose and she fell back to the lake bottom (*Minneapolis Morning Tribune* 6.22.1953); MHM contends authorities did not try again or could not find the wreck on subsequent attempts. The missing hull strakes could be casualties of the first salvage attempt.

Wooden C Scow Wreck, 21-HE-559 (Anomaly 1052)

Anomaly 1052 is a wooden C Scow covered in fiberglass. In order to evaluate the site, an understanding of the history and rarity of wooden C Scows must be addressed. John O. Johnson of Johnson Boat Works of White Bear Lake, MN, has been widely accepted as the developer of the C Scow by 1905, after the success experienced by his larger A scow *Minnezitka*. However, a local sailor on White Bear Lake contends Gus Amundson of Amundson Boat Works, Johnson's former employer, developed the C Scow. Out of deference for Amundson, Johnson did not construct C Scows until the 1920s (Fletcher Driscoll, personal communication, October 2021). Until 1945, JBW was the primary manufacturer of C Scows in the United States, although others constructed this vessel type. In 1945, Harry Melges of Zenda, WI, began production of the Melges C Scow. The C Scow is a class of sailboats dinghy used in competitive racing that were constructed to a standard for size and sail yardage.

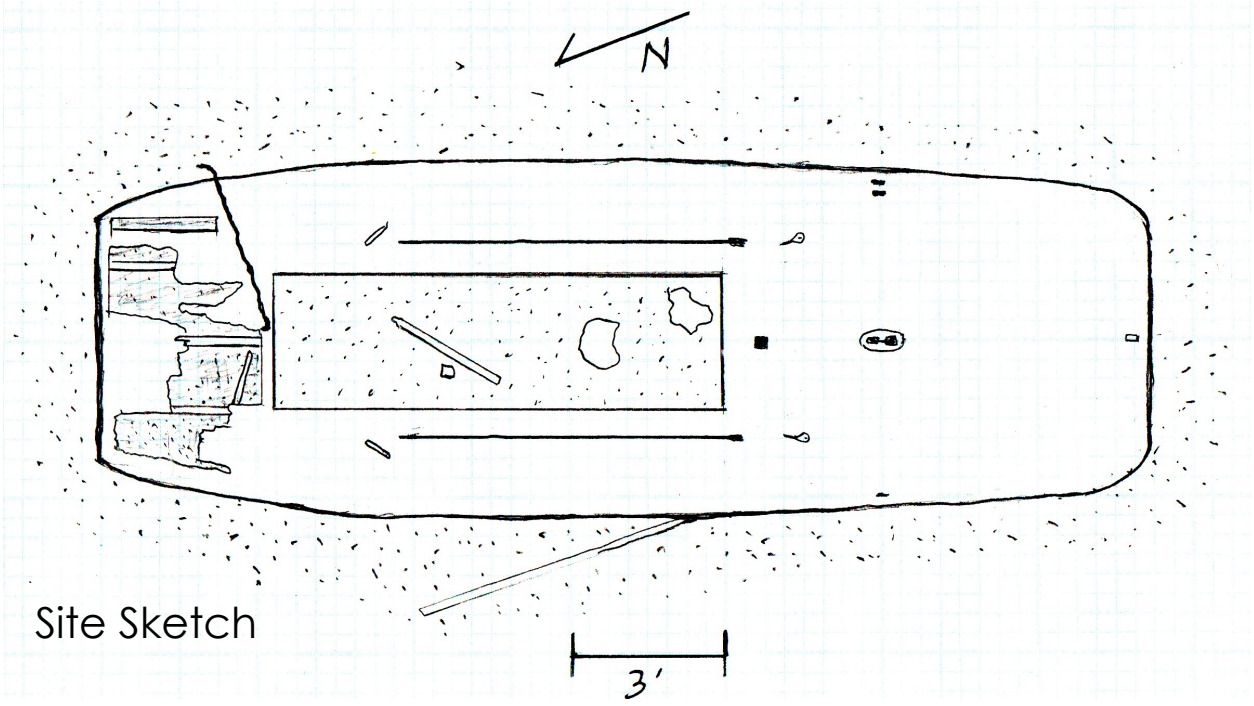
(Mower 1901, 387)

1963 Johnson C Scow
(craigslist.com)

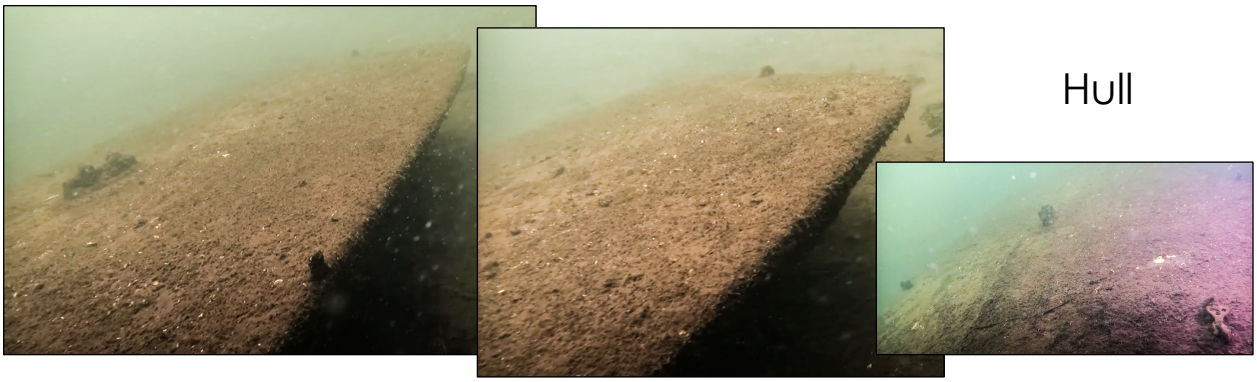
Minnezitka

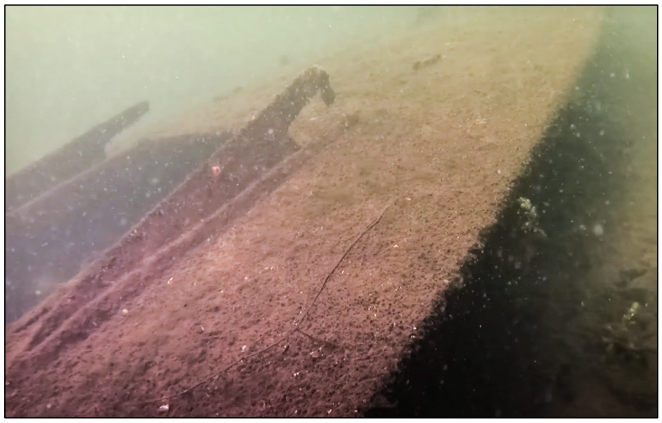
C Scow Race on Bde Maka Ska 1968 (Minneapolis Sailing Center)

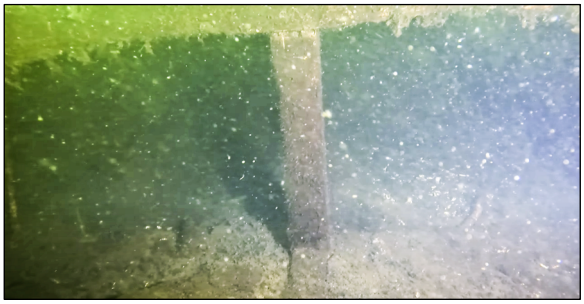
The Wooden C Scow Wreck site is 20.20 feet long, 6.80 feet in the beam, has a 1.30-foot depth of hold and 4.90-foot transom, and is constructed from fiberglassed wood. The bow of the C Scow Wreck is rounded but blunt, while the transom stern is vertical; its shallow draft allowed for skimming over the surface of the water to achieve high speeds. The entire gunwale survives and the large deck is nearly intact; areas amidships and forward have stays, backstay eyes, cleats, traveler controls, a bow plate, and the mast partner/step. The stern deck is extensively damaged, with many deck boards missing, torn from the C Scow leaving jagged edges. The exposed stern quarter areas inside the hull show a series of frames and floors attached to the inner hull, in addition to stanchions and a deck beam. The rectangular cockpit is intact and the inner hull structure is visible. Bulwarks on both port and starboard are seen, strengthened by stanchions, and there is an independent stanchion under the forward edge of the cockpit that supports the foredeck. This stanchion is supported by a keelson. On both sides of the cockpit, 2 bilge boards and trunks are present. Some paint is exposed at the stern, comprised of blue, green, and red. The boards are deployed, supporting the hull off the lake bottom. Anomaly 1052 was constructed in the mid-1920s and was likely fiberglassed in the early 1950s.



Hull



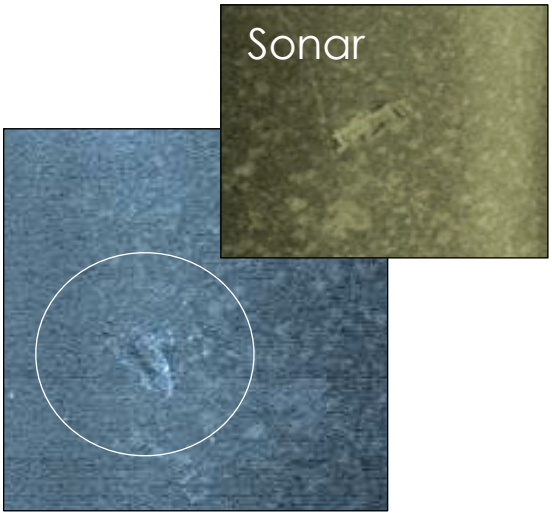




Owners of motorized watercraft were required to obtain a registration number from the State and affix it to the port and starboard bow by July 1959. The wreck does not have a Minnesota registration number, and sailboats were not required to be licensed until March 1972. MHM contends the Wooden C Scow Wreck sank before 1965 based on the lack of deep silt in and around the site; water moves through the area quickly toward the lake outlet, and much of the silt remains in the water column. Anomaly 1052 is the only C Scow wreck known in Minnesota waters.

Larson Watercraft Seaman Wreck Site, 21-HE-555 (Anomaly 854)

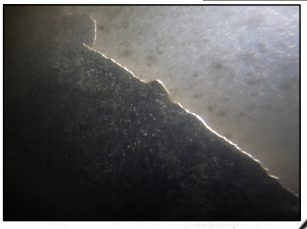
Anomaly 854, the Larson Watercraft Seaman Wreck site, is 10.50 feet long, 3.70 feet in the beam, and constructed from aluminum. However, the Larson Seaman model, when constructed, was 12.00 feet long. Unfortunately, the bow of the wreck is nearly destroyed, with only a thin, jagged piece of the keel where the stempost joins it, surviving. Originally, however, the bow was pointed and had a bow casting. One stern casting survives and identifies the wreck: "WATERCRAFT *Seaman* LITTLE FALLS, MINN." The gunwale survives with the exception of the bow, although it consists of the sharp aluminum edge; originally Anomaly 854 had a sturdy wooden caprail. The transom stern has a distinct flat wooden V-shaped rubrail and rectangular wooden motor board, both designed to accommodate an outboard motor. The motor board is in poor shape and both of these attributes are painted red. A metal bracket used to secure the outboard motor is attached to the transom; below it, attached to the inner transom and the hull's bottom, a simple knee provided additional support to the stern. A substantial wooden splashrail is on port and partially intact on starboard; both rails originally extended beyond the transom and were used as carrying handles. Originally, the Larson Seaman had 3 wooden benches; on the starboard side, a bench support and oarlock survive amidships and lightly aft of amidships. Rivets throughout the wreck hold it together, along with Phillips head screws that attached the surviving stern casting to the hull. Red paint survives in spots around the hull; when constructed, a red stripe ran down both sides of the hull and a red Larson logo was painted on both stern quarters. Because of low visibility at the site, any surviving aluminum floors, frames, and futtocks could not be discerned. Anomaly 854 was between 1946-1948, the only years this model was manufactured. MHM contends she sank around 1959 due to the absence of a any part of a registration number on the portions of the bow that survives.

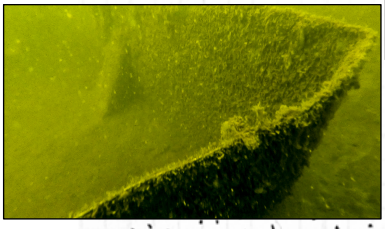


Stern Casting

Complete Stern Casting
(aomci.org)

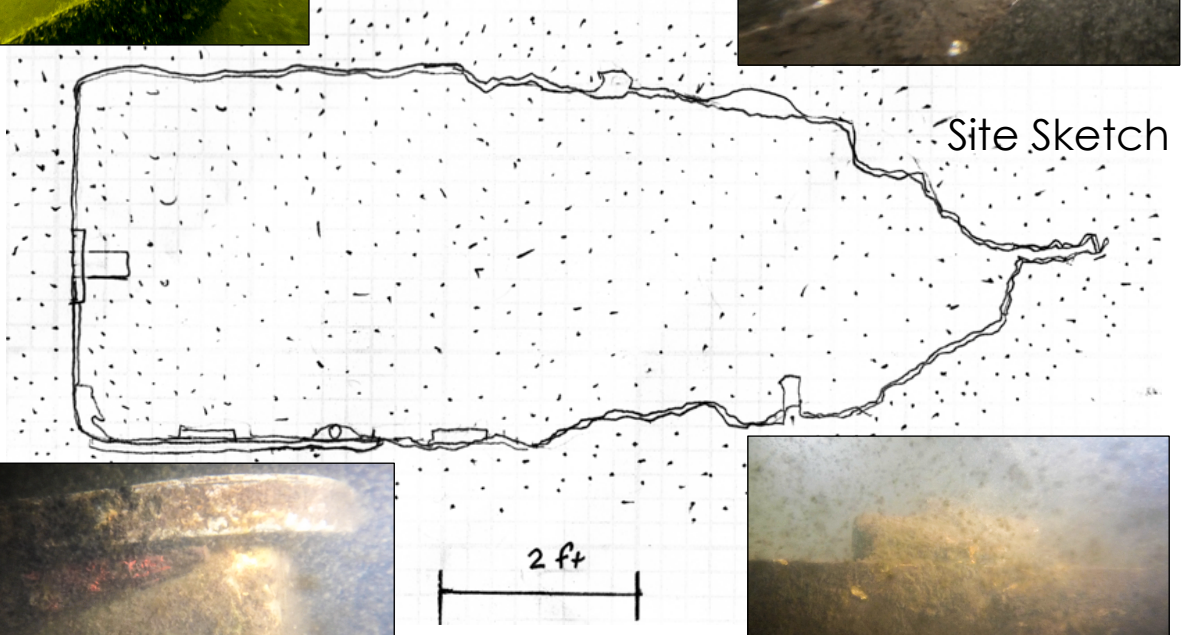
Simple Stern Knee

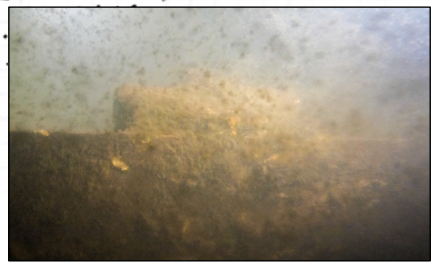




Port Quarter

N



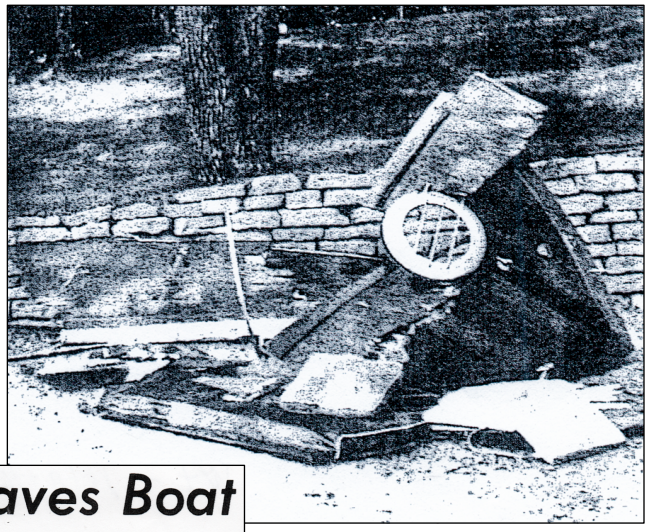


Original Stern Look
(antiqueboatamerica.com; aomci.org)

Owens Cruiser Deluxe Wreck Site, 21-HE-565 (Anomaly 55)

MHM has been periodically recording Anomaly 55 since 2013. The wreck is a 1959 wooden 22-foot Owens Cruiser Deluxe (Handley Marine Division 1959) missing her bow; she was involved in collision just before midnight on July 31, 1970, that resulted in the deaths of 3 people. An 18-foot inboard runabout cut across the bow of the Owens, tearing off nearly 1/3 of the watercraft; about 5.60 feet of the vessel was sheared off and she quickly sank. It was reported that "the survivors were picked up by an Excelsior boater who heard cries for help" - the only other watercraft on the lake in that area. When the rescuer arrived at the scene, lights of one of the sinking watercraft could be seen just below the water's surface, heading down to the bottom. The rescuer pulled 4 people out of the water, and after a search of the vicinity, the group could not find the other 3 boaters; all that was visible were floating pieces of wreckage. Once at the shore, the group called the Hennepin County Sheriff's Water Patrol and found that a lake resident who had witnessed the collision had already called the Sheriff - an official boat was already on the way. One casualty was located around 12:45 am, and one report - confusingly - claimed that "the boats were recovered and the bodies were not in them" and it was this action that spurred on dragging operations. MHM has proven that 1 of the wrecks has not been raised, and it is unknown if the other one was located and brought to the surface. Regardless, by the evening of August 1, the other 2 victims were pulled from the lake after dragging the area. Floating detritus, the remnants of the bow of the Owens Cruiser Deluxe Wreck, was collected up and brought to shore (*LaCrosse Sunday Tribune* 1970; *The Maverick* 1970; *Mound-Westonka-Minnetonka Sun* 1970; *Minneapolis Star* 1970; *Minneapolis Tribune* 1970; *St. Cloud Daily Times* 1970).

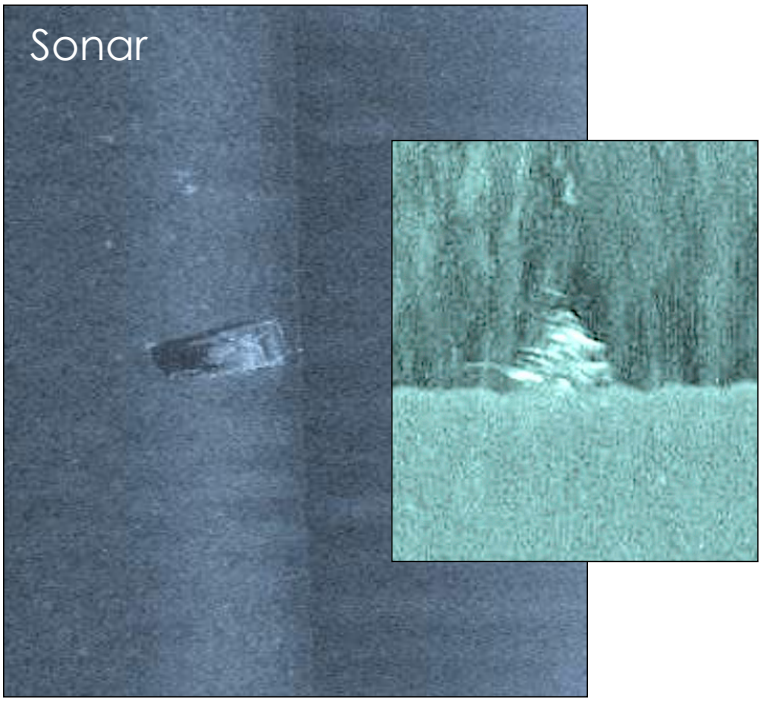
Three Drown in Minnetonka Boat Collision

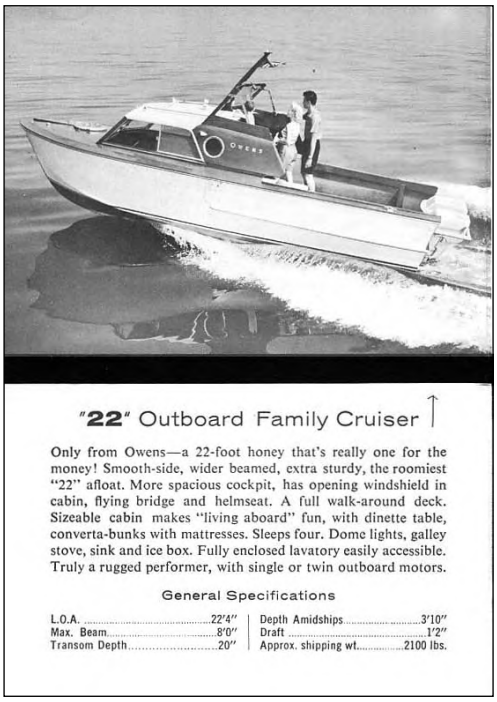


Man Saves Boat Crash Survivors

Boats Collide In Minnesota; 3 Killed, 4 Saved

Anomaly 55 lies in 42 feet of water. The site is 16.40 feet long by 8.20 feet wide; when constructed in 1959 the wooden Owens Cruiser Deluxe was 22.00 feet long. The hull is carvel-built (a smooth hull as opposed to a lapstrake/clinker-built) and has a substantial splashrail on both sides near the silt line. The bow is broken off at the point where the foredeck met her cabin windshield and unfortunately, her registration number went with the bow debris - and cannot be seen in the newspaper photo of the remnants. The wreck has a smooth hull (as opposed to the lapstrake option also offered for this Owens model), a square transom, and her gunwale survives aft of the hull break. The vessel had a railing attached to the stern gunwale by small stanchions that were torn off during the wrecking process. Some stanchions have survived intact and there are remnants of some stanchion bases on the port and starboard gunwales amidships and on the transom. On the transom gunwale, an air scoop is attached on the port side and the gas cap is on the starboard side. On both port and starboard quarters, 'lifting cleats' are attached to the gunwale; cleats with round lifting rings combined into their design. A stern mast light is hanging by its wiring off the stern. At least one stanchion dislodged and fell into the wreck, visible on top of a thin layer of silt inside the hull. The railing is not among the wreckage. The engine is housed in a doghouse amidships just to port of the captain's chair; it is covered in a thin layer of silt. The chair is the type that could be stowed on the starboard side of the bridge when it is not deployed; it is partially deployed. The wreck's superstructure is largely intact including her port and starboard porthole-style windows. The starboard side sliding windows are open and partially dislodged from their frames; the port side sliding windows are open and one of them has fallen outward onto the gunwale. The lower windshield is smashed, with jagged glass surviving. The upper windshield is intact but the bulkhead that comprised the interior forward wall of the vessel's dining area is gone. The cabin's roof had 2 handrails on port and starboard to assist boaters when walking along the gunwale to the bow or to the stern; the port handrail loosened and fell to the gunwale. Also on the roof, and in place, are a spotlight, horn, and folded ladder; over the years, the spotlight's head has rusted off and fallen, held up by its wiring.





"22" Outboard Family Cruiser

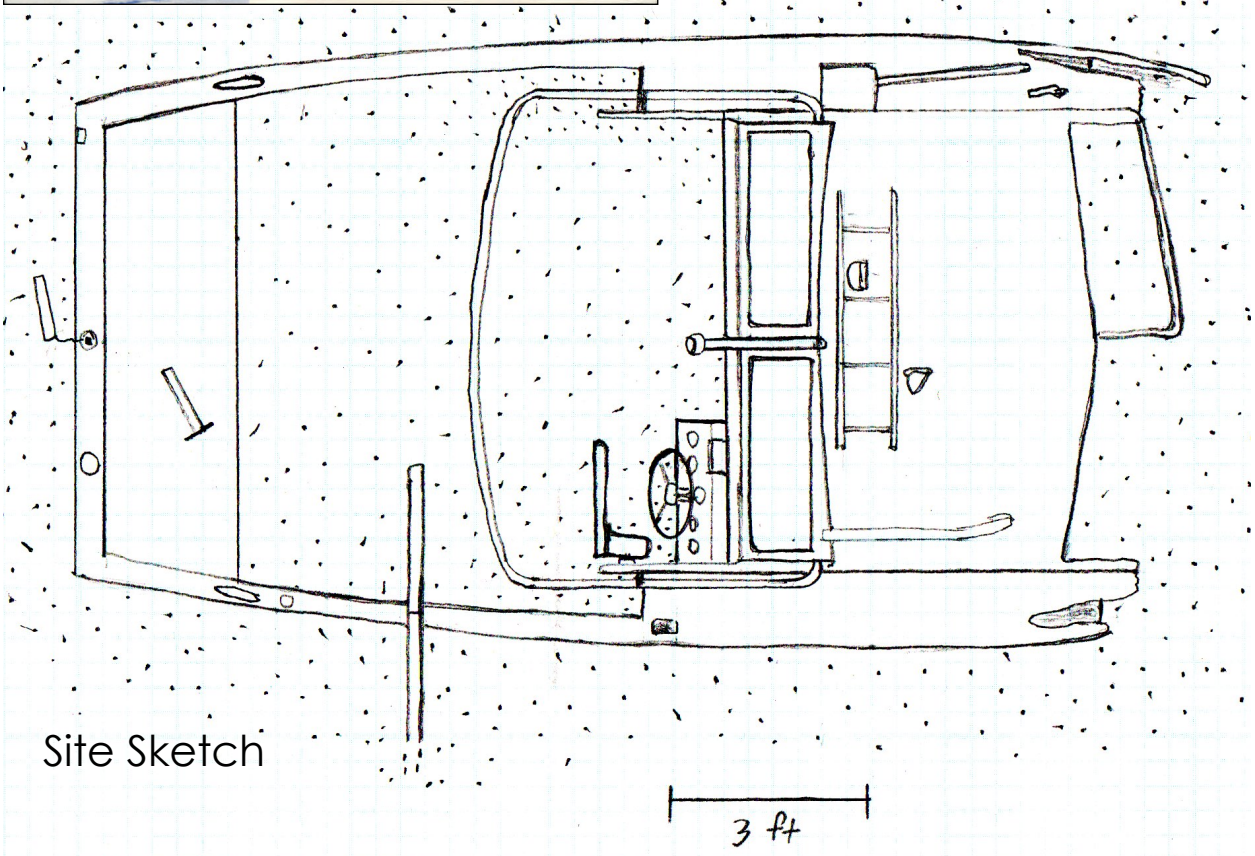
Only from Owens—a 22-foot honey that's really one for the money! Smooth-side, wider beamed, extra sturdy, the roomiest "22" afloat. More spacious cockpit, has opening windshield in cabin, flying bridge and helmseat. A full walk-around deck. Sizeable cabin makes "living aboard" fun, with dinette table, converta-bunks with mattresses. Sleeps four. Dome lights, galley stove, sink and ice box. Fully enclosed lavatory easily accessible. Truly a rugged performer, with single or twin outboard motors.

General Specifications

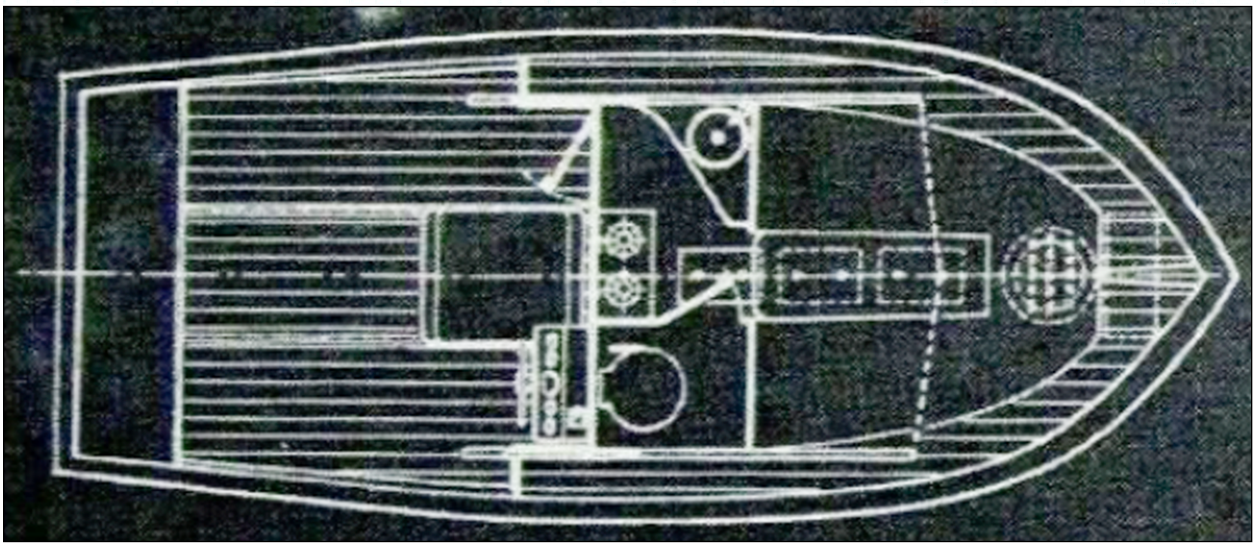
L.O.A.	22'4"	Depth Amidships	3'10"
Max. Beam	8'0"	Draft	1'2"
Transom Depth	20"	Approx. shipping wt.	2100 lbs.

1 IN

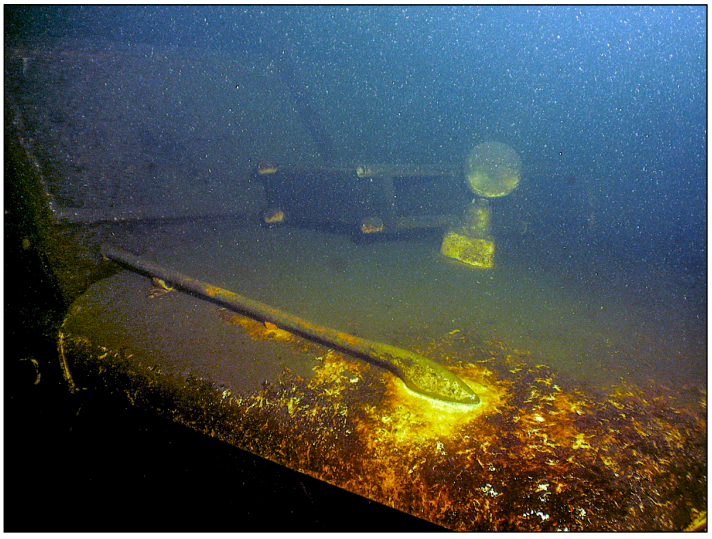
OWENS
SPEEDSHIPS®

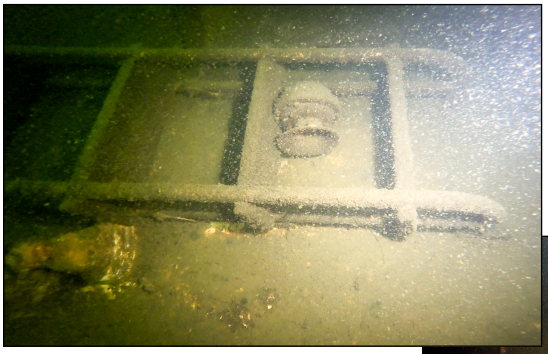


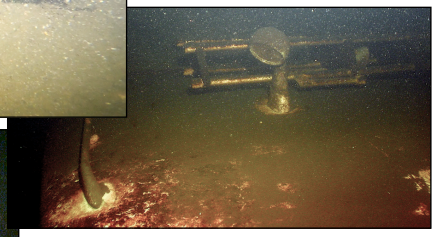
Site Sketch



Cabin Top Details

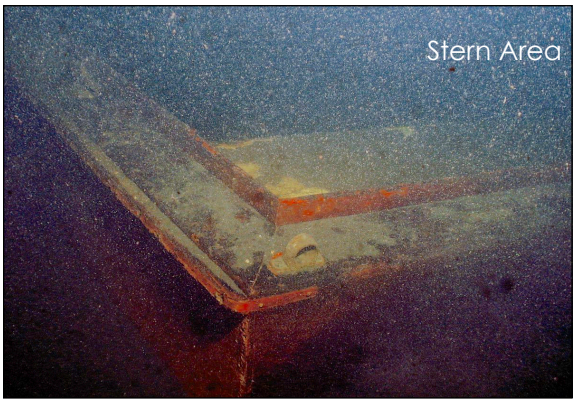


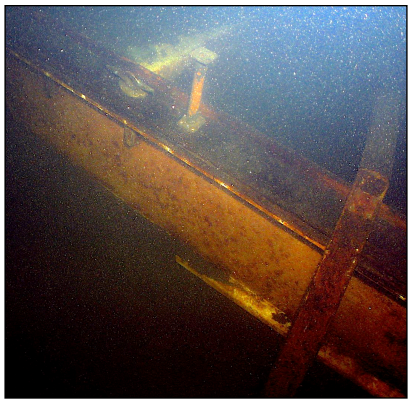




Starboard
Windshield
Opening

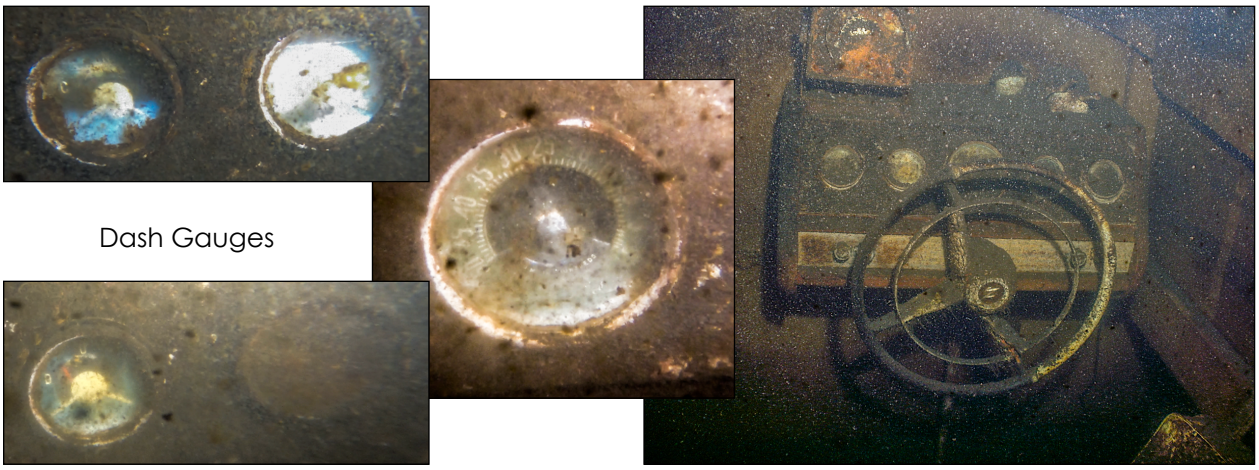
Captain's Chair



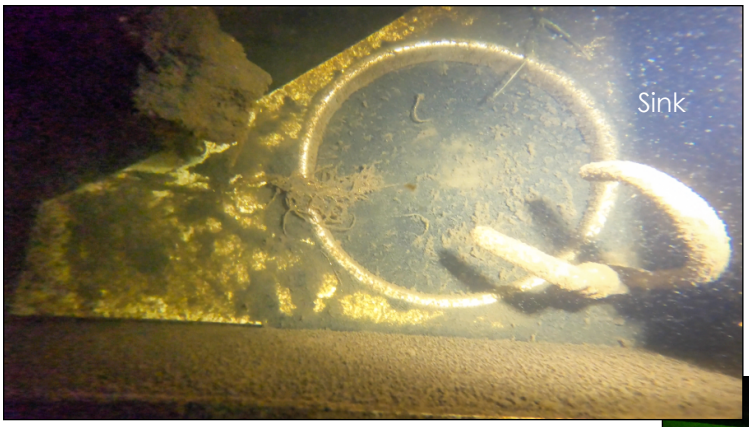


The dashboard on the starboard side of the pilot area is intact and a fish finder is attached to it's top. On the port side, at the break where the runabout sheared off the wreck's bow, the vessel's strakes have separated from the gunwale and splay outward. This part of the wreckage shows the locations of 3 deck beams and a loose port navigation light is lying on the gunwale. Inside the cabin, a variety of attributes survive including a kitchenette with a port side sink and faucet and a 2-burner stove below a wall shelf. The door to the head is closed, but it is located to starboard of the stove. The door to the galley is open and is apparently fallen off its hinges. On both sides of the superstructure aft of the windows, the '**O W E N S** ' brand name is clearly seen; although the '**N**' is missing on the starboard side, but its 'shadow' can be seen. A frame for a bimini top, not standard equipment for this Owens model, is attached to the superstructure's side above the '**O**' on the starboard side and the '**S**' on the port side. An average of 8 inches of silt accumulated over time in the hull can be used for comparison with other wreck sites as an indicator site disposition. Since the wrecking date of the Owens Cruiser Deluxe Wreck is known, sediment has accumulated in her hull at a rate of .18 inches per year.

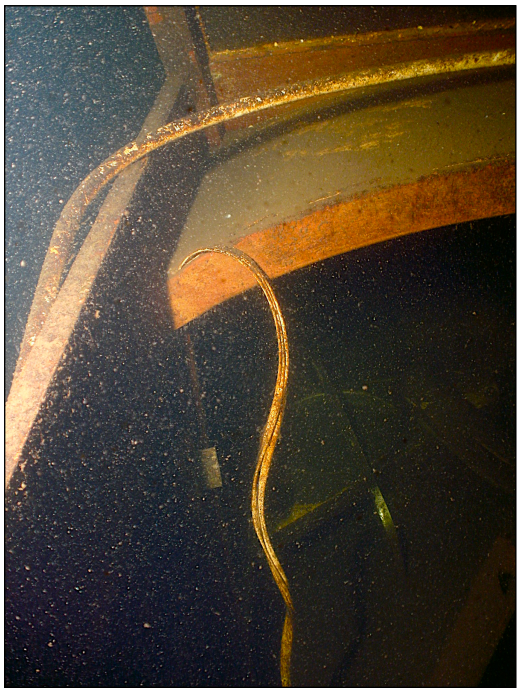
Steering Wheel and Console

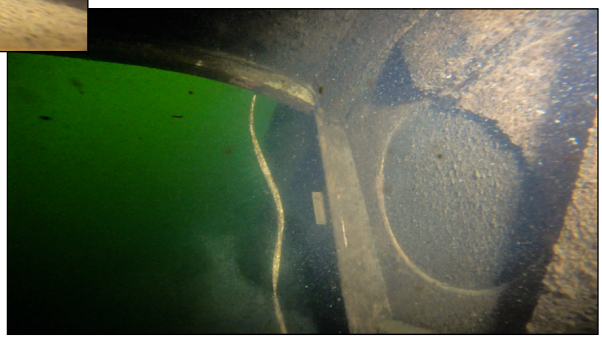


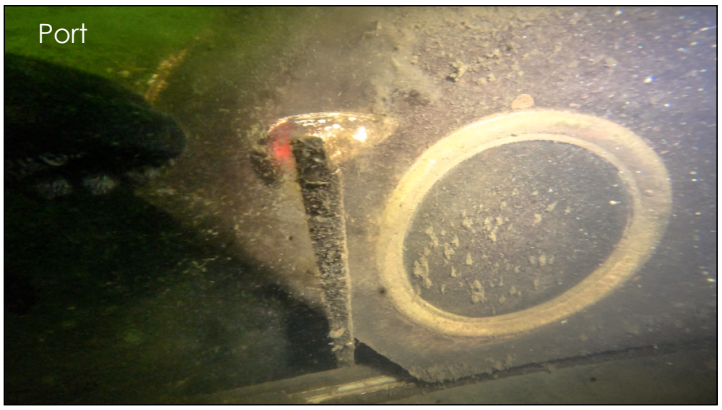
Dash Gauges



Inside the Cabin

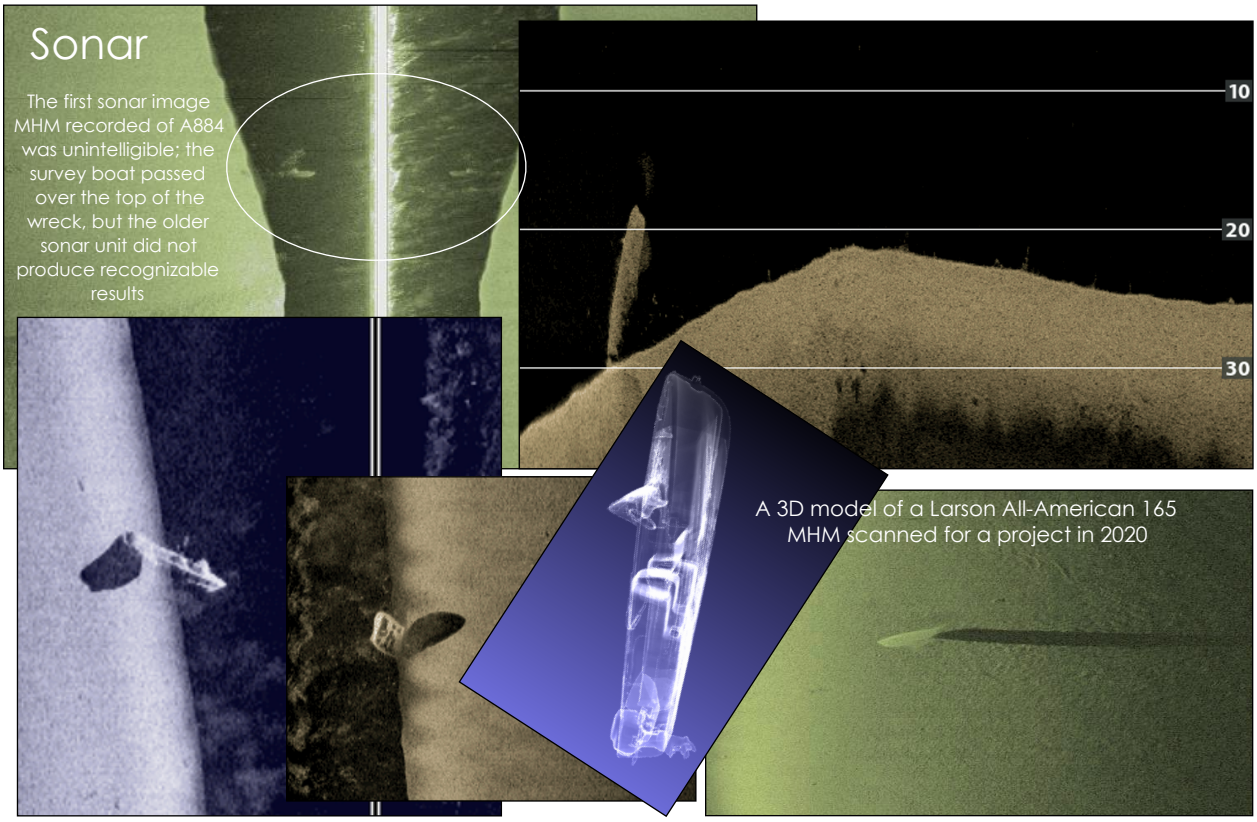


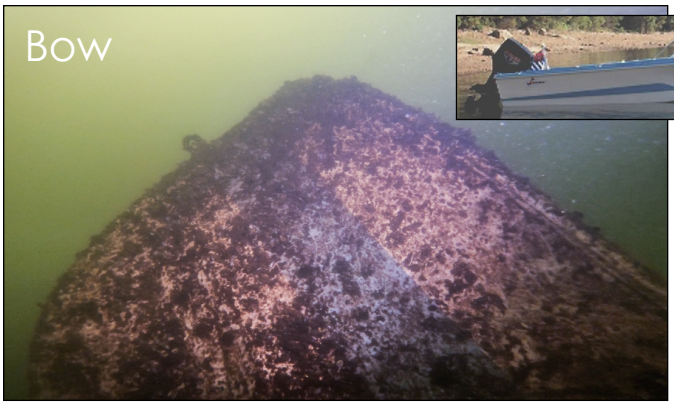


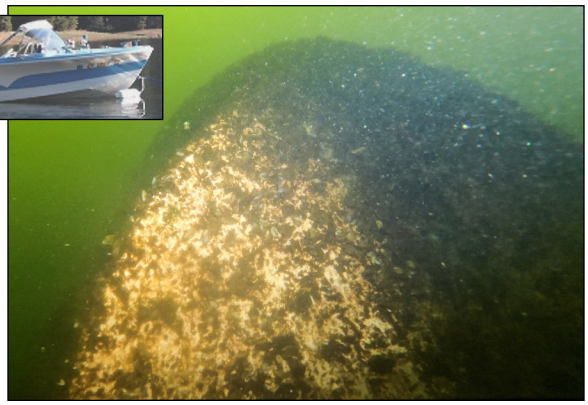


Upright Larson All-American 165 Wreck (Anomaly 884)

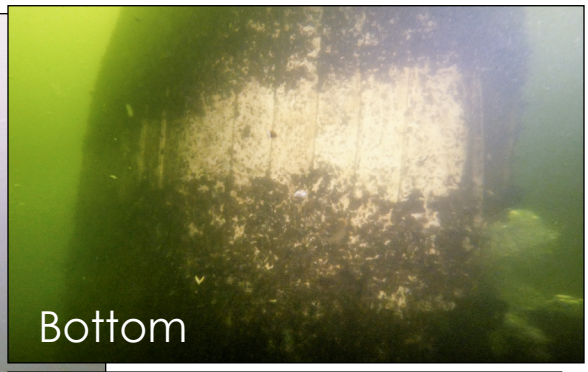
Anomaly 884 was not recognized in the 2011 sonar data during MHM's initial survey of the lake when the survey boat traveled directly over the top of the wreck, leaving a poor quality image. Improved sonar gear used in 2020 allowed MHM to recognize the wreck's acoustical signature. The wreck is profusely covered in zebra mussels and some were removed to reveal details, but MHM has thoroughly documented a Larson 165 using 3D scanning, so the attributes that are standard on this model are well-known. Therefore, a full description of the wreck will be presented here, using knowledge from the study of a white and red 165 housed at the Minnesota Historical Society. The fiberglass Upright Larson Boat Works All-American 165 Wreck is 16.70 feet long, 6.30 in the beam, and is standing upright in the water column, held in place by the weight of her outboard motor. The molded construction of the boat leaves the hull seamless, with the exception of the join of the 'deck mold' with the 'hull mold'. The 'hull' is comprised of the 'lapline' bottom below the waterline that widens out at the turn of the bilge. The rounded bilge at that point in the hull acts as a splashrail of sorts. The outer hull has 1 more molded 'step' before the smooth hull begins as the boat flares outward to the gunwale. The pointed bow is somewhat bluff and toward amidships, the hull widens out for stability. The square transom - that cannot be seen because it is in the silt - is designed to accommodate an outboard motor and 2 handles are located on port and starboard. On both port and starboard, the iconic Larson 'mermaid's kiss', arrow, or spear - whichever description suits the boat's owner - is depicted in light blue within the white hull. A fragmentary 'Larson' logo is adhered to the port quarter wiped clean of zebra mussels and on the starboard quarter, the logo is complete, but with the top red layer worn off; it is now shiny silver. There is a partial silver and black 'All-American' logo surviving amidships on the port side of the wreck above the 'mermaid's kiss'.

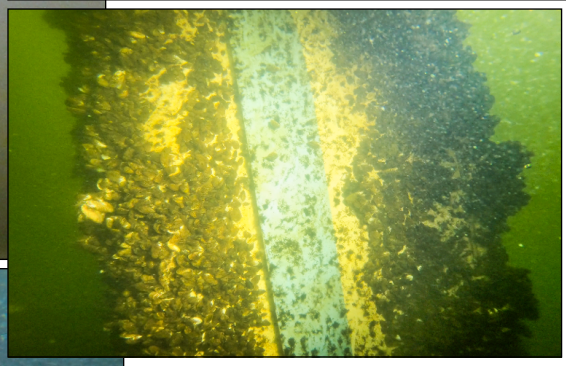


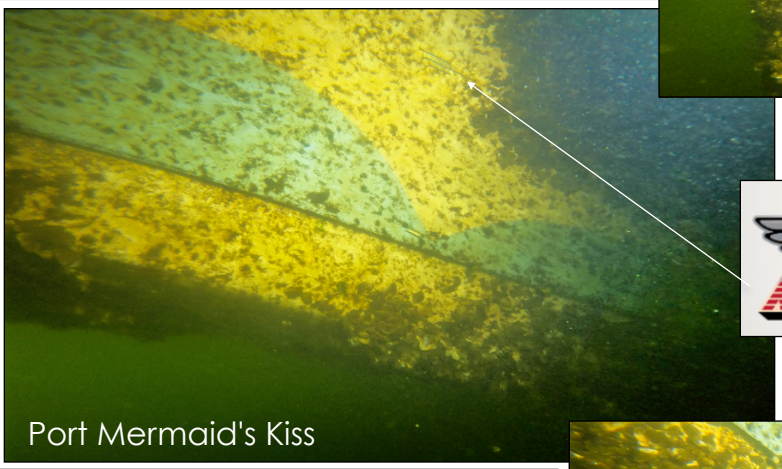

Bow



Port Amidships

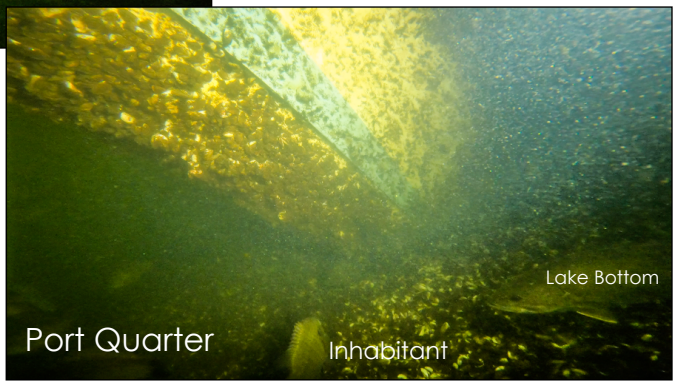

Bottom




Port Mermaid's Kiss

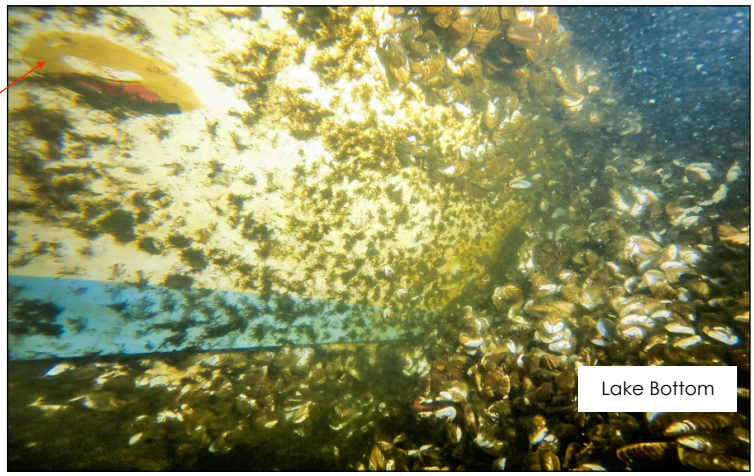
ALL AMERICAN

Inhabitant
Lake Bottom


Lake Bottom
Port Quarter
Inhabitant

Starboard Quarter

Larson


Lake Bottom

Starboard Quarter
Larson

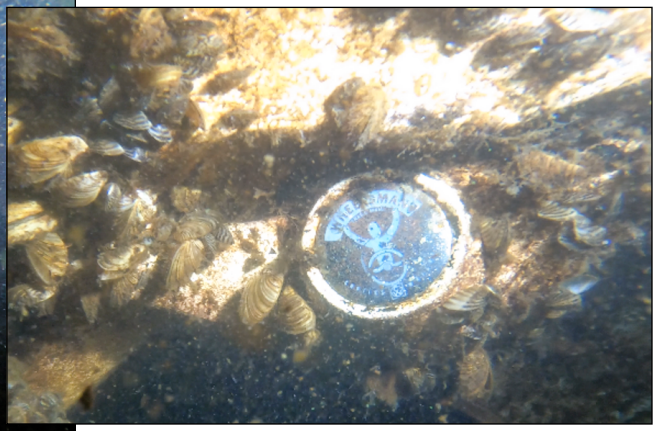
The deck consists of a blue molded fiberglass foredeck, gunwales, dashboard, seats, and self-bailing motor well. Many foredeck fittings can be discerned through the layers of zebra muscles including a bow lifting handle, navigation light, and a deck cleat. White step pads survive on the port quarters, and there are cleats on the gunwale that are buried in the silt. The dash has an ignition plate, a possible electric start button or choke and plate, and a red 'light' reflector or indicator whose function is unknown. The driver and front passenger seats are actually formed in the deck mold. Cubbies were created automatically during the fiberglassing process under the rear seats and in between the forward bench backs and the rear-facing back seats. Under the foredeck, a loose white seat cushion with handles - that would also act as a flotation device - and a red plastic battery cover are being held at the bow due to the position of the wreck in the water column. A Curtiss-Wright 'Wheelsman' white-colored steering wheel with the 'hands-free' logo on its round hub cap is also extant. Further, a plastic or vinyl boat cover, or similar object, is entangled around the steering wheel with parts of it fluttering around in the water. An Evinrude controller with 2 levers is attached to the inner starboard hull; its surface markings cannot be discerned due to zebra mussels. Anomaly 884 is resting on top of her 1961 Evinrude Starlite III 75 HP outboard motor.

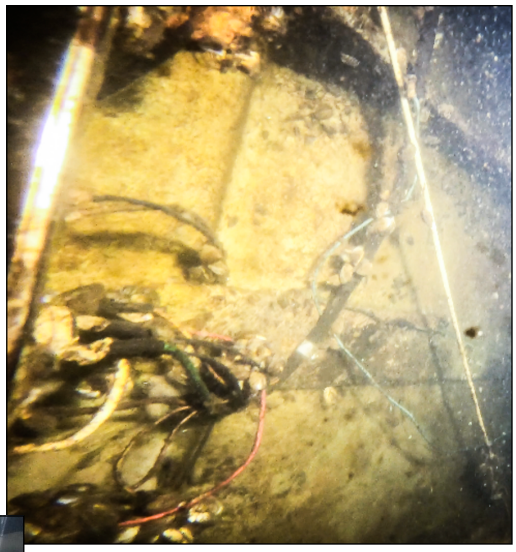
Nav Light and Lifting Handle

Ignition

Starboard Step Pad

Vinyl Piece and Wheelsman Steering Wheel





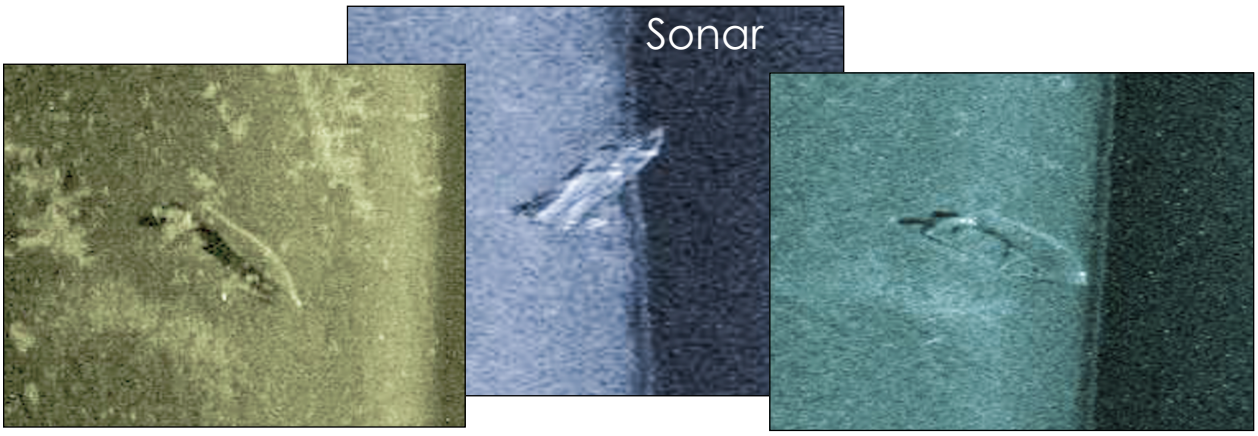
Starflite III 75 HP
Evinrude Outboard
Motor

The boat's registration number is only partially discernible and MHM's best guess - MN 3551 AN - is affixed on the port bow along with a Minnesota-shaped light blue validation sticker. Another validation sticker is affixed to the starboard bow, but the registration number is not discernible. Further, the printing on both validation stickers has worn off. DNR records indicate that MN 3551 AN was assigned to a 1968 fiberglass Larson 15-foot boat whose last validation expired in December 1997 (Kong Moua, personal communication, February 1, 2022). Prior to computers, this type of misinformation was recorded on registration cards and any mistake or change simply traveled from one registration validation to another upon its expiration. And, since only paper records existed for decades, changes could be made at any time, with no guarantee that the information was accurate. MHM contends that after Anomaly 884 sank, the owners of the boat purchased a 1968 15-foot Larson All-American and transferred the number to their newly-acquired watercraft. Given the evidence that is visible on the hull, specifically the light blue validation stickers, MHM determined that the Upright Larson All-American 165 Wreck sank between 1971-1973 while underway - not while sitting at a dock - when the state validation sticker was light blue outlined in black, with black writing. Further, if the wreck sank in 1997, as the registration number suggests, her last validation stickers would be square-shaped, light blue with white trim, a white-outlined Minnesota, and with a large white "97" inside the state graphic. Lastly, the boat's identification as model 165 stems from her Dupont vinyl interior and the Curtiss-Wright

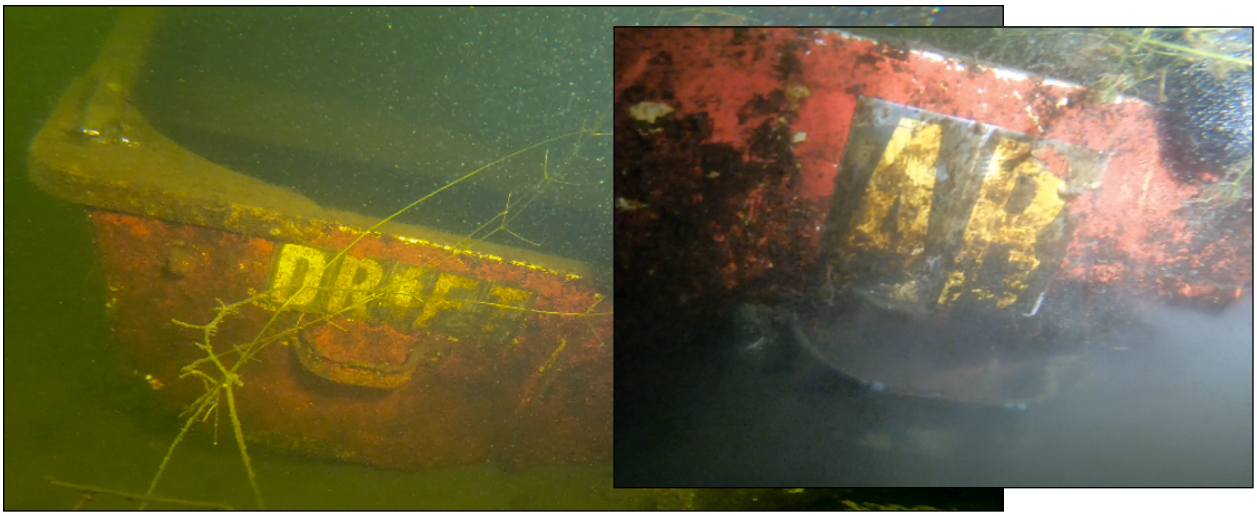
Wheelsman Safety Lock Steering, options offered for that model exclusively (Bowman 1959). The Upright Larson All-American 165 Wreck cannot be categorized as an archaeological site at this time, but she is a State and Federally protected underwater maritime historical resource.

Larson Game Warden Wreck - Update (Anomaly 726)

During the LMNA-8 Project in 2018, MHM identified Anomaly 726 as a Minnesota-built Larson Game Warden aluminum wreck with the registration number MN 0887 AQ[1], she was constructed in 1965, and sank between 1980-1982. A partial boat's name is affixed to the port transom with white letters on a blue background, spelling *DRIFT* (Merriman and Olson 2018, 27-29) MHM returned to the wreck in September 2020 to shift a small amount of silt from the starboard transom to reveal the remainder of the name. The words *WOOD* or *AWAY* were suspected to be affixed there; what was found was *AB*. What *DRIFT AB* means, in terms of a boat name, is unknown. The now re-named ***Drift AB* Larson Game Warden Wreck** cannot be categorized as an archaeological site at this time, but she is a State and Federally protected underwater historical resource.

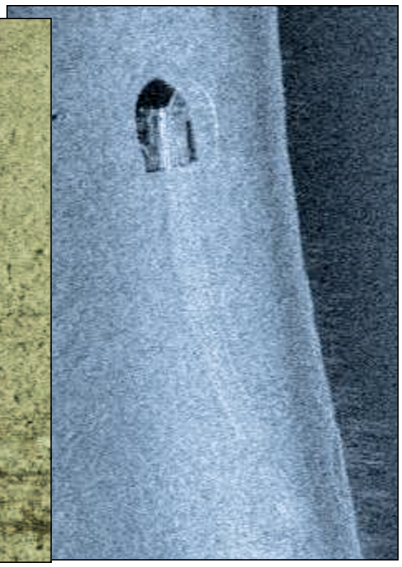


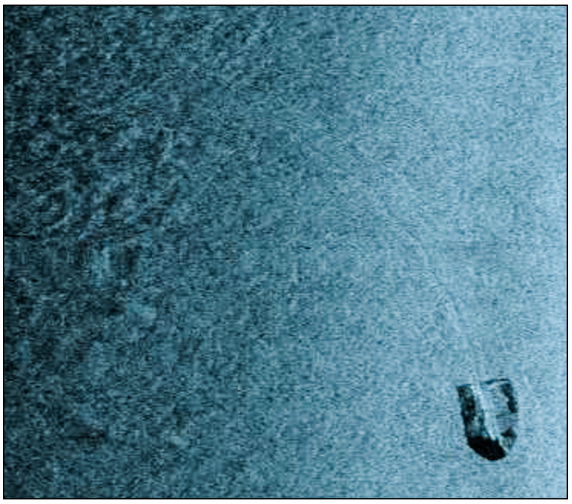
[1]This letter sequence was assigned to a watercraft in 1959 that was not Anomaly 726. MHM has discovered several wrecks on the bottom of Minnesota's lakes with ambiguous or outright contradictory information that has been reported to the DNR. In considering Anomaly 726, MHM contends that her owner had a boat registered in 1959 with the number 0887 AQ and when the 1965 Larson was purchased, the number was (inappropriately) transferred to the new boat. The identification of the original vessel assigned this number cannot be determined because the registration information for the years 1959-1972 were destroyed when the Department of Conservation became the Department of Natural Resources - and additional space was needed.

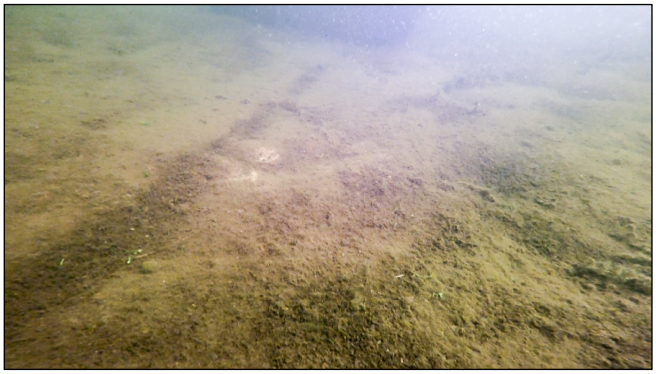


Homemade Fiberglassed Utility Wreck (Anomaly 1010)

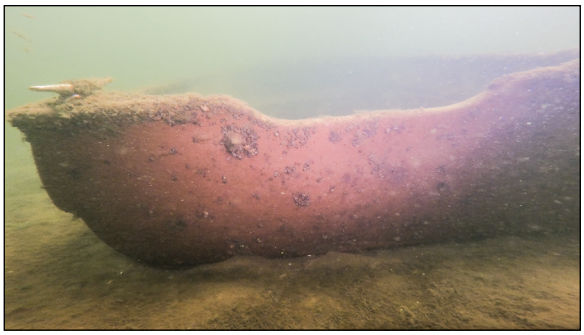
MHM conducted sonar surveys in the area where Anomaly 1010 lies has been surveyed using sonar at various times between 2011 and 2019. However, the wreck was not recorded by sonar until May 2021. Therefore, the boat sank to the bottom between mid-May, 2019, and ice-in during the Autumn of 2020 - mid-December at the latest. Additionally, the sonar footage from 2021 indicates that the wreck was either dragged along the bottom for a distance, or when she sank, she skimmed along the bottom before stopping at her current location. The Homemade Fiberglassed Utility Wreck is 14.10 feet long, 5.10 feet in the beam, and 4.40 feet at the transom. The hull is constructed of wood that is completely encased in fiberglass. The pointed bow has a substantial cambered deck with a hold beneath; a towing ring with remnants of a towline are attached to the stempost. A curved cowling/small dashboard borders the aft edge of the foredeck. The gunwale, with a caprail and rubrail, are intact throughout the wreck. The upper half of the hull on both port and starboard extend 'further out' than the bottom hull sections, creating a substantial splashrail along the entire wreck. The square transom is broad and substantial, with corner castings - that appear to be made of aluminum - on both port and starboard, added for strength and stability. On the inner transom, a substantial motor board is attached at the gunwale, with an additional stringer extending to both the port and starboard quarters. This piece of wood is the only un-fiberglassed attribute visible on the wreck. A large loop is attached to the inner transom to port, and a sturdy stern knee is located along the centerline, attached to the transom and the hull bottom. Two athwartships frames/floors run 'under' the stern knee - the knee is slotted to fit over them, and another is seen just aft of the front bench. The bench, located just aft of the foredeck cowling, is box-like and might have acted as flotation using trapped air. Four stringers, 2 port and 2 starboard, run along the inner hull, adding rigidity to the hull. On both port and starboard, the bench is attached to the hull's sides, acting as a sort of 'raised' deck beam that added strength and rigidity. Under the foredeck, the outlines of the deck boards can be seen under the fiberglass sheet, along with green paint that was applied to exposed wood. Surviving fittings include a lifting cleat in the center of the foredeck, a mooring cleat on the port quarter, and the remnants of a fish finder base on the starboard quarter. The wreck is with covered with layers of thick red paint over sheets of fiberglass.

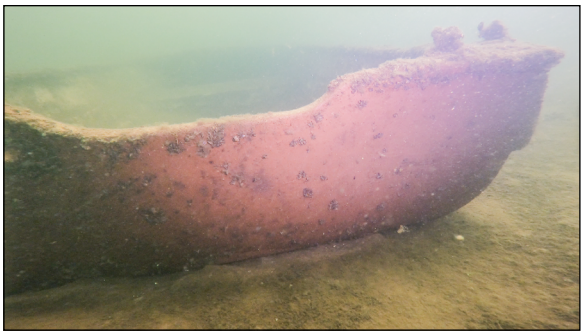




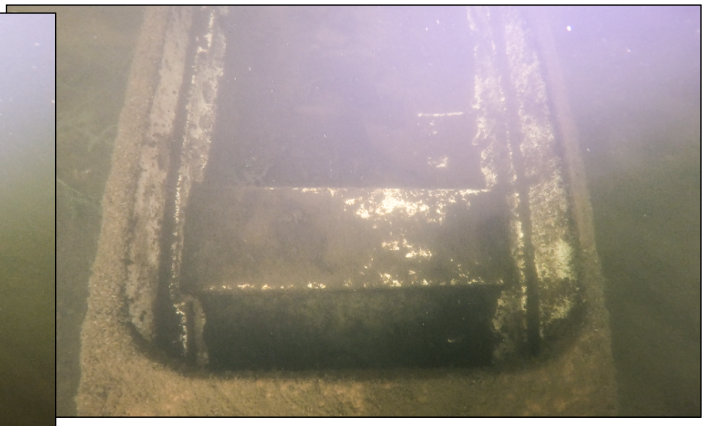


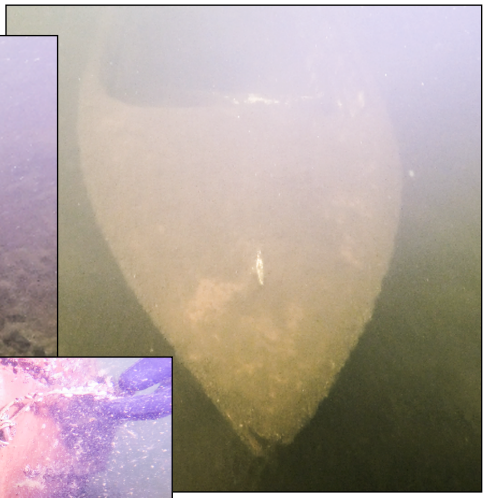
Drag Marks Shown in
Sonar and Photos
60 Feet Long





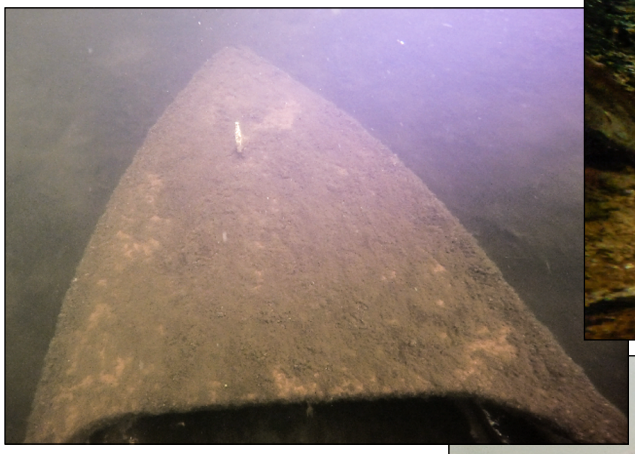
Starboard

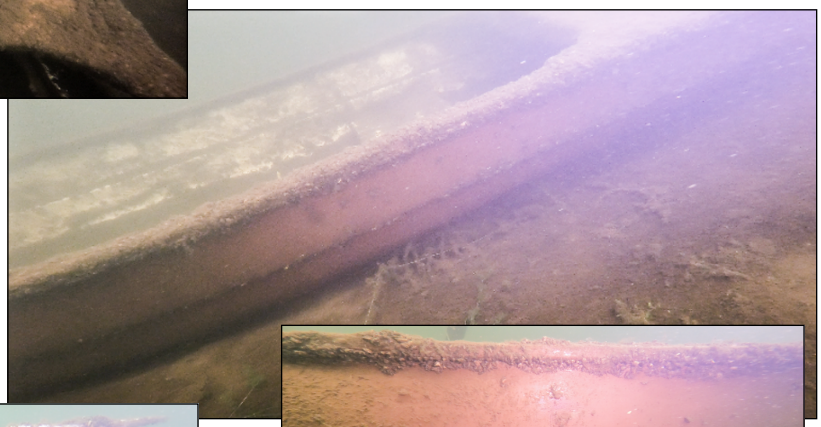




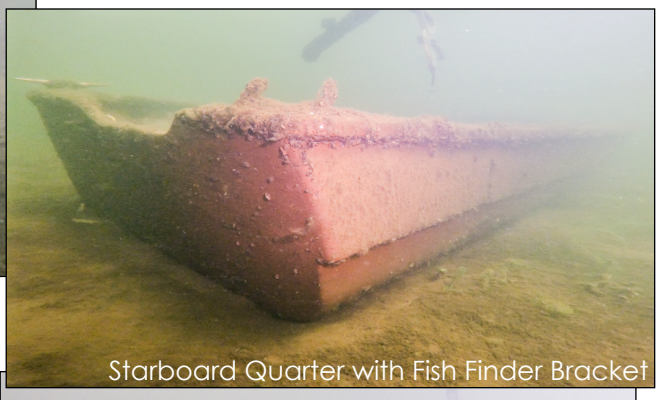
Starboard Bow

Under the Deck



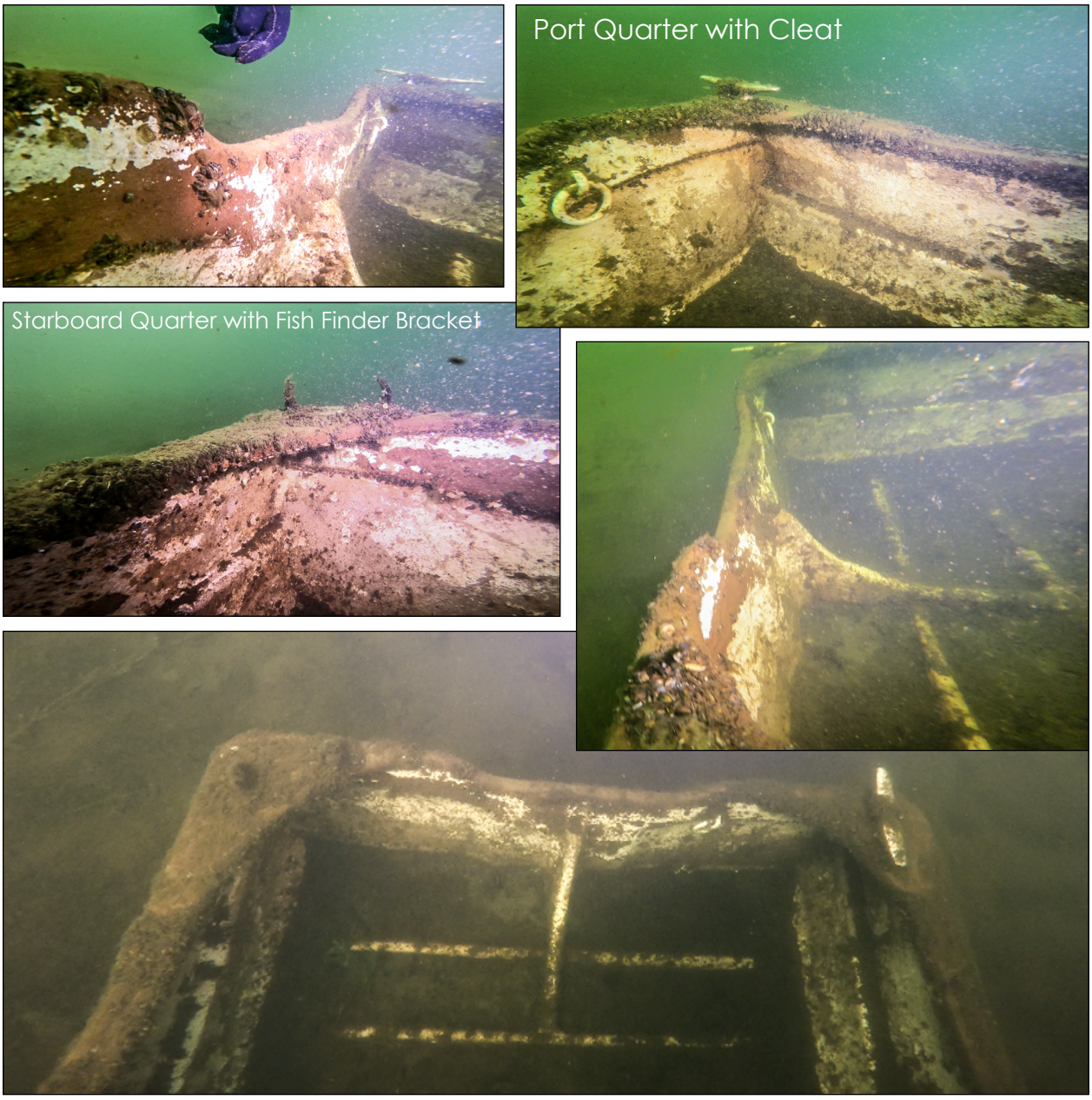


Port Quarter with Cleat



Starboard Quarter with Fish Finder Bracket

Inner Transom with Motor Board, Knee, and Loop

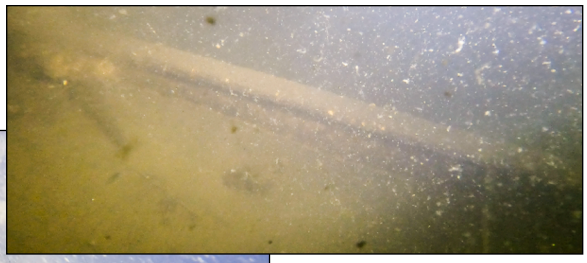


MHM noted the lack of frames visible on the inner hull; the stability of the boat on the water depended on the rigidness of the bench, quarter castings, the few floors visible, and the stern knee. MHM contends the outboard motor carried on this boat during her working life was small and lightweight. Further, the lack of dash attributes such as an odometer, speedometer, ignition, and fuel gage, along with the lack of controller, steering cables, and steering wheel evidence, indicates that the boat was steered and controlled at the stern using the outboard's tiller. The placement of the fish finder - on the starboard quarter - also supports the idea that the boat's operator was located at the stern. Additionally, the operator must have had a movable chair at the stern that is no longer extant or a built-in seat or bench that was removed prior to the boat's intentional scuttling. Once again, as with A726, A884, and A1024, the specifics about this boat provided to the DNR by her owner are inaccurate; records indicate that Anomaly 1010 should be a fiberglass home-built watercraft constructed in 2015 (Kong Moua, personal communication, March 7, 2022). However, the wreck is constructed of wood, covered in

fiberglass, and the wreck's registration number is MN 5115 EK - see on the port and starboard bow. The validation sticker expired in December 2017, and the statistical information listed on the surface is mostly still legible. It lists the boat's model as 'HOMEMADE' and her length was recorded as 16 feet long. The actual length of the hull, as measured by MHM, is 14.10 feet long. Additionally, the alpha series 'EK' was used in the early 1980s and would not have been assigned to a boat constructed in 2015. Based on the style of the wreck, the application of the fiberglass sheets onto the hull, and the visible condition of what little wood can be seen, MHM contends Anomaly 1010 may be a kit boat from local companies such as Taft and Luger, other builders around the country such as Sea Shell, Ozarka, California Kit Boats, or U-Mak-It, among many others; she may have been constructed in the 1960s-1970s. The Homemade Fiberglassed Utility Wreck cannot be categorized as an archaeological site at this time, but she is a State and Federally protected underwater maritime historical resource.

Crestliner Sportsman Wreck 2 (Anomaly 1024)

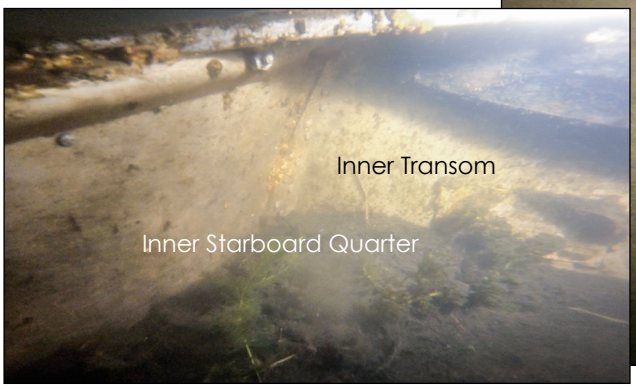
MHM investigated Anomaly 1024 in June and August, 2021, under poor visibility conditions. The aluminum wreck is 12.00 feet long and 4.10 feet in the beam, with a partial registration number visible on the port bow: MN 6329 A_. Minnesota validation stickers survive near the registration number: an orange/possibly yellow sticker under a red sticker next to a blue sticker. On her port and starboard quarters, stern corner castings provide a strong join for the gunwales and the transom - and they also provide the only identification of the hull as a Crestliner. Based on the size of the wreck and her smooth hull, MHM determined Anomaly 1024 is a Sportsman model constructed between 1954-1962; all Sportsman models after 1962 had faux lapstrake hulls. Because of the limited visibility, many structural details of the wreck are obscured by silt. However, beyond the stern castings, some details are evident. The wreck has a bow casting with a carrying handle, the gunwale is comprised of extruded aluminum, oarlocks are visible amidships, and the square transom is designed for an outboard motor. The inner transom has a wooden motor board attached inside the stern on both port and starboard. Tie-down loops are located on both the port and starboard transom. The wreck has 3 hollow aluminum benches, but the aft example is the only one that is partially exposed. A Mercury 6 HP outboard motor controlled with a tiller is still attached to the wreck. Based on the motor's design, it was manufactured between 1986-1992.

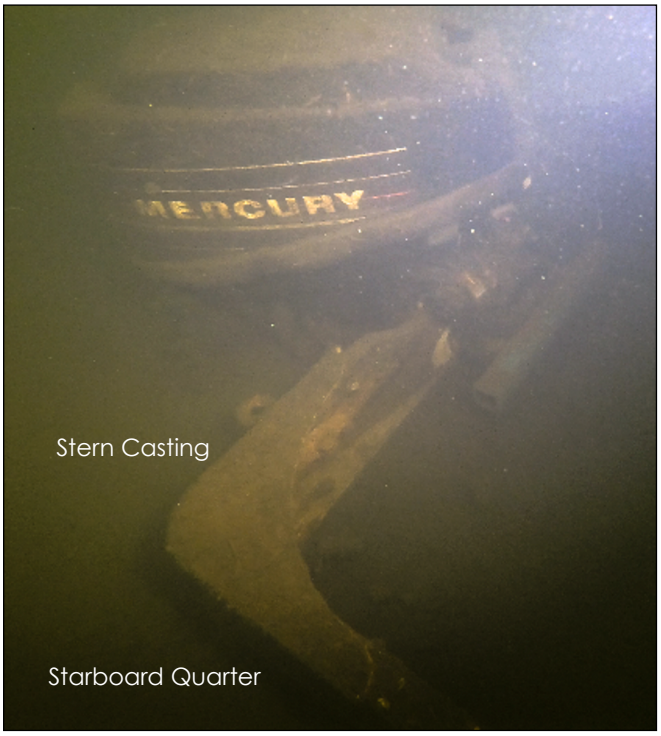


Inner Starboard Hull
Bench

Gunwales

Port Quarter


Inner Transom
Inner Starboard Quarter


MERCURY
Stern Casting
Starboard Quarter

MERCURY

Records held by the DNR indicates that the likely complete registration number for this wreck is MN 6329 AR, but that number is attached to a 14-foot Crestliner built in 1968, whose last validation sticker expired in December 1988 (John Nordby, personal communication, August 31, 2021).[2] Like the Upright Larson All-American 165 Wreck (Anomaly 884) and the Larson Game Warden Wreck (Anomaly 726) having the 'wrong' registration numbers or incorrect information linked to the number, MN 6329 AR could not originally have belonged to a 14-foot Crestliner from 1968. Firstly, the AR alphanumerical sequence belongs to the run of numbers assigned to Minnesota watercraft in 1960, 8 years before a 1968 boat was manufactured. Secondly, Crestliner Sportsman boats had faux lapstrake hulls as opposed to smooth-hulls after 1962; a 1968 Sportsman would have a faux lapstrake aluminum hull. Thirdly, A1024 is 12 feet long, not 14 feet long; 14-foot long aluminum Crestliners in 1968 that resembled A1024 were the Commodore and Super Seaman models. Therefore, whomever owned the boat, at some point the 1960 boat that was associated with that registration number was recorded as a 14-foot 1968 Crestliner. MHM contends that the registration card MN 6329 AR is Anomaly 1024 and she sank sometime during 1986-1988 while underway, as evidenced by the fact that the motor was down, indicating it was out on the lake and not tied to a dock. The Crestliner Sportsman Wreck 2 cannot be categorized as an archaeological site at this time, but she is a State and Federally protected underwater maritime historical resource.

Crestliner Brochures

[2]In terms of reconciling the DNR dating information with the on-hull validation stickers, at this time it is not possible to create a complete series with the information on hand.

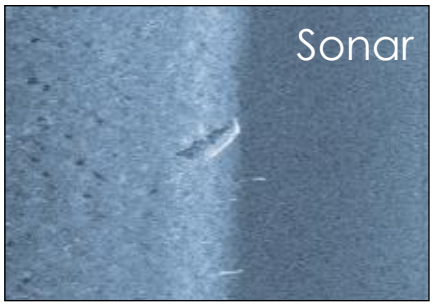
Fiberglass Sailboat Wreck 2 (Anomaly 856)

Anomaly 856's sonar signature indicated it rested among a collection of rocks, and that it might be a tree. MHM dove on the anomaly in August 2020 - in poor visibility, and identified her as a fiberglass scow sailboat wreck. The wreck is 13.10 feet long, 4.30 feet in the beam, and a 3.00-foot transom. The bow is of the scow design and the transom stern is square. The hull has no discernible construction logos or registration stickers. The wreck has wide raised gunwales that slope inward toward a large cockpit that is pointed and deep forward. The gunwale on both the port and starboard quarter is still raised, but not as high as amidships and forward. The transom stern is flush with the deck and the rudder and tiller are attached to it at the centerline. A lever with a round handle grip is located on the port side of the cockpit and the mast hole/partner is located just forward of the cockpit, The deck is red and the hull is white. The Fiberglass Sailboat Wreck 2 cannot be categorized as an archaeological site at this time, but she is a State and Federally protected maritime historical resource.

***Minneapolis* Wreck Anchor, 21-HE-403 (Anomaly 698)**

MHM recorded sonar images of Anomaly 698 several times over the years and while its acoustical signature appeared interesting - human made - its size suggested it was not a wreck. Therefore, several field seasons went by before it was finally investigated in 2020. Using an ROV instead of SCUBA to identify the anomaly - that rested on a steep hill - MHM identified A698 as a large concrete rectangle wrapped in rigid wire held together with a large heavy clevis. Because of its location, MHM contends the block is a remnant of the 1911 burning and sinking of the Sidewheel Steamboat *Minneapolis*, and held the boat in place while she burned and sank (Merriman and Olson 2019a, 10-23). MHM suspects either 2 or 4 anchors held the boat in place, with the lines burning through as the steamer sank, leaving the metal intact around the anchor. The anchor is about 12.00 long and 2.00 feet thick. MHM submitted an update to the OSA, augmenting archaeological site details for the *Minneapolis* Wreck, 21-HE-403.

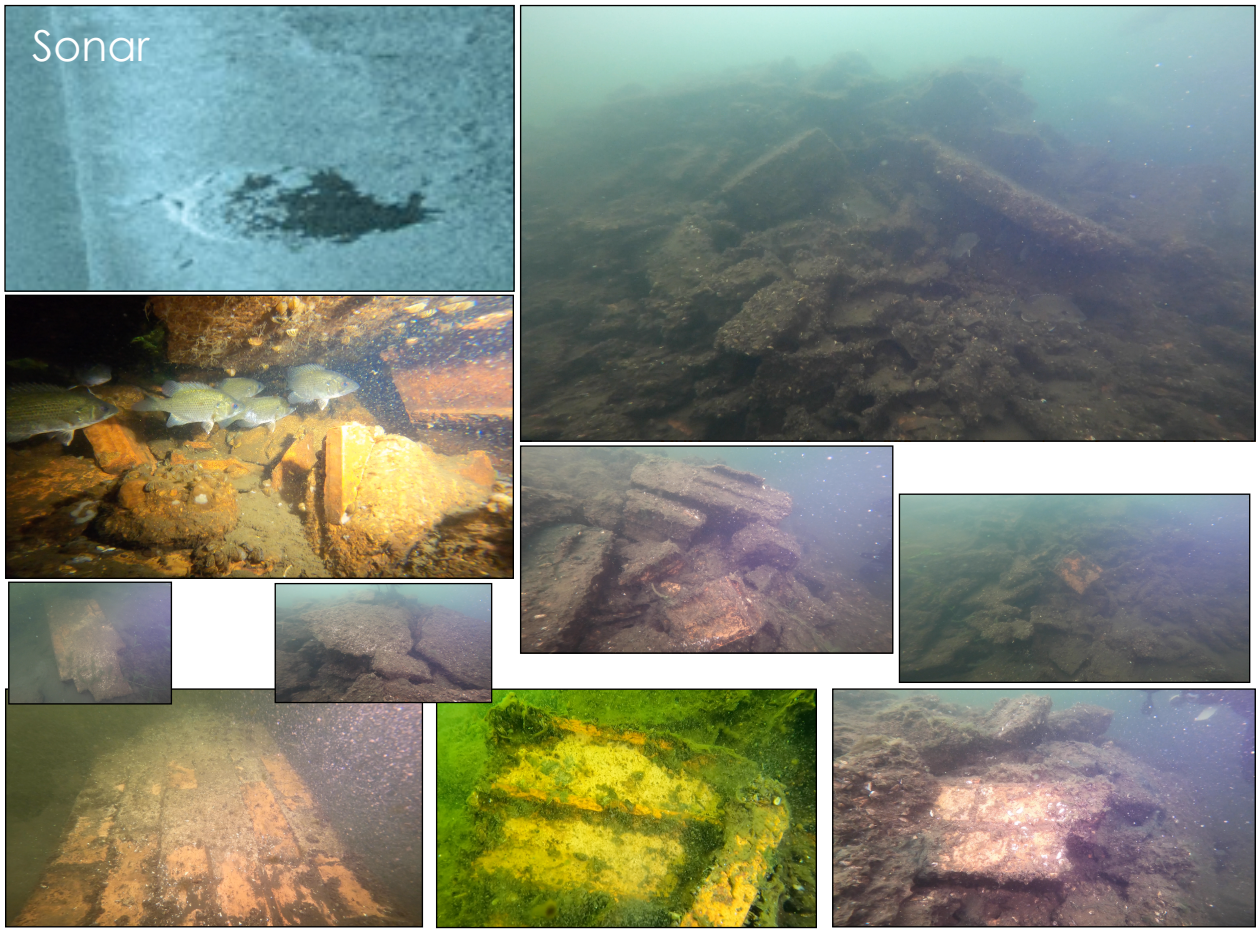
Pontoon (Anomaly 908)



MHM investigated Anomaly 908 in 2020, with the hypothesis that it was part of the nearby Damaged Fiberglass Wreck (Anomaly 585), identified in 2016. However, a brief dive on the anomaly proved that it is a metal pontoon. The Pontoon (Anomaly 909) is a protected submerged maritime cultural resource.

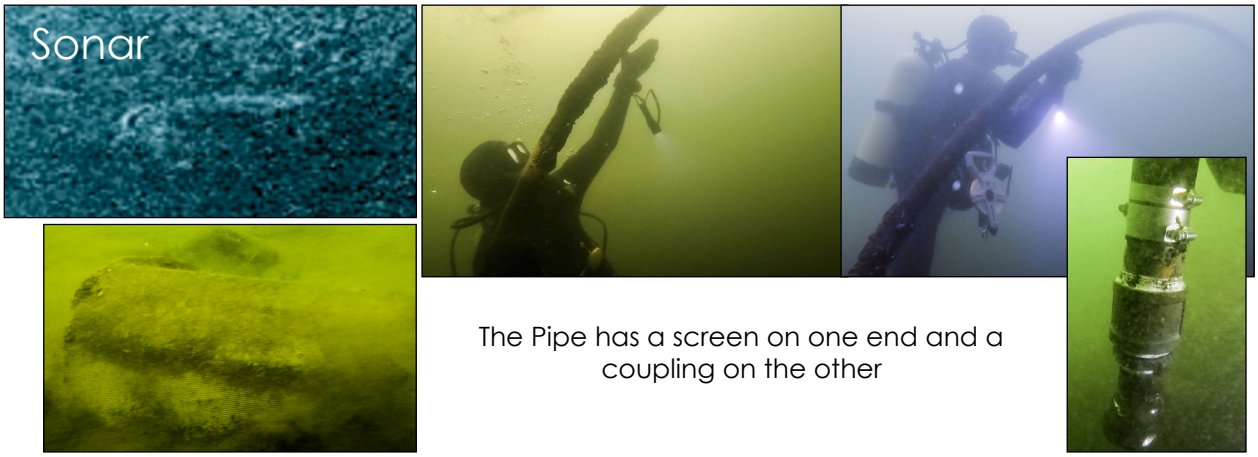
Rubble Pile (Anomaly 1039)
Big Island Steamboat Pier, Amusement Park, and Veteran's Camp, 21-HE-402

Anomaly 1039 is a Rubble Pile that is 6.00 feet tall and 18.00 feet in diameter that was dumped in the lake during the destruction of the Big Island Amusement Park. It joins Rubble Pile Anomaly 351 as a newly recognized part of the Big Island Steamboat Pier, Amusement Park, and Veteran's Camp Archaeological Site 21-HE-402. As the amusement park buildings and features on Big Island were being systematically torn down, primarily during 1918 (Merriman and Olson LMNA-5 Report 2015, 21-23; 2019b, 6-7). Some building materials, including terra cotta bricks, concrete, and metal components were - sometimes - taken onto the ice and allowed to sink. MHM updated the Big Island Steamboat Pier, Amusement Park, and Veteran's Camp Archaeological Site to include Anomaly 1039 with the OSA.



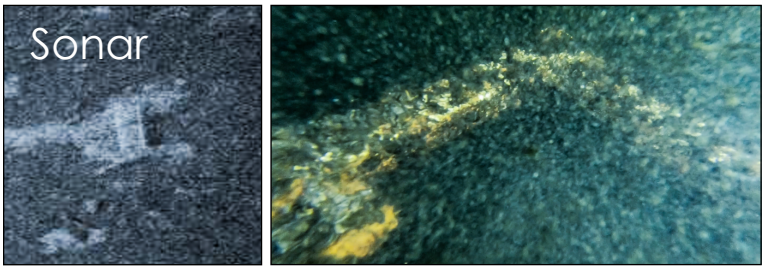
Arched Rubber Pipe (Anomaly 1053)

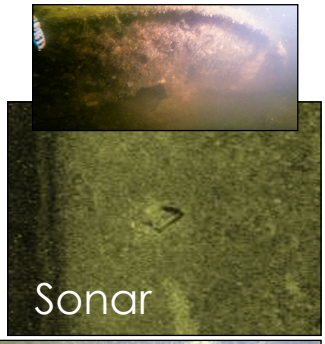
MHM suspected Anomaly 1053 was a wreck since it had a convincing acoustical sonar signature. Actually, A1053 is a stiff black Arched Rubber Pipe with a large metal filter on one end and a hose connector on the other. The pipe was attached to a domestic or possibly a commercial watering system that utilized lake water for lawn care. The pipe is 40.00 feet long, the distance between the ends is 18.60 feet, and the arch rises 10.00 feet off the lake bottom. The Arched Rubber Pipe is a protected submerged cultural resource.



Metal Frame (Anomaly 862)

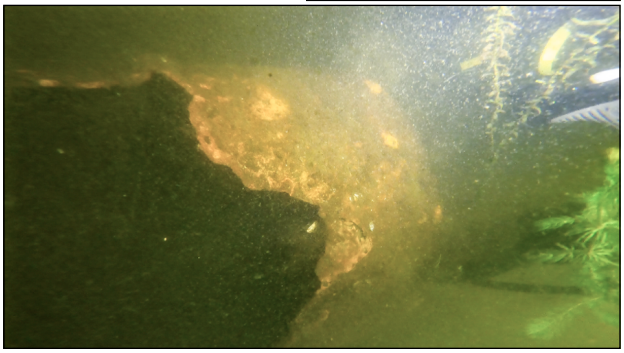
The acoustical signature of Anomaly 862 suggested it was a barge or similar structure. Upon investigation, it was determined to be a Metal Frame of undetermined use; it is not obviously part of a boat lift or dock. Anomaly 862 measures 9.00 feet by 12.00 feet, and is a protected submerged cultural resource.





Rusty Barrel (Anomaly 741)

The acoustical signature of Anomaly 741 look promising prior to investigation, not as a wreck, but a possible maritime object. Technically, the Rusty Barrel may be a maritime object, possibly as a component of a swim raft. The barrel measures 3.20 feet tall and 1.90 feet in diameter, and is a protected submerged cultural resource.



Aluminum Ladder (Anomaly 898)

Anomaly 898 is an orange-red Aluminum Ladder that is 10.30 feet long, 2.50 wide at the bottom, and 1.40 wide at the top. Its actual length is unknown because it has 2 additional sections that are not extended. Anomaly 898 is a protected submerged cultural resource.

Trees and Logs (Anomalies 800, 807, 1037, 1056)

While some long and thin targets may look like wrecks, often turned on their side, a series of them during the LMNA-10 Project were identified as 2 trees (A1056), a large branch (A807) and 2 cut logs (A800, A1037).

Big Rocks (Anomalies 860, 869, 885, 1026, 1038)

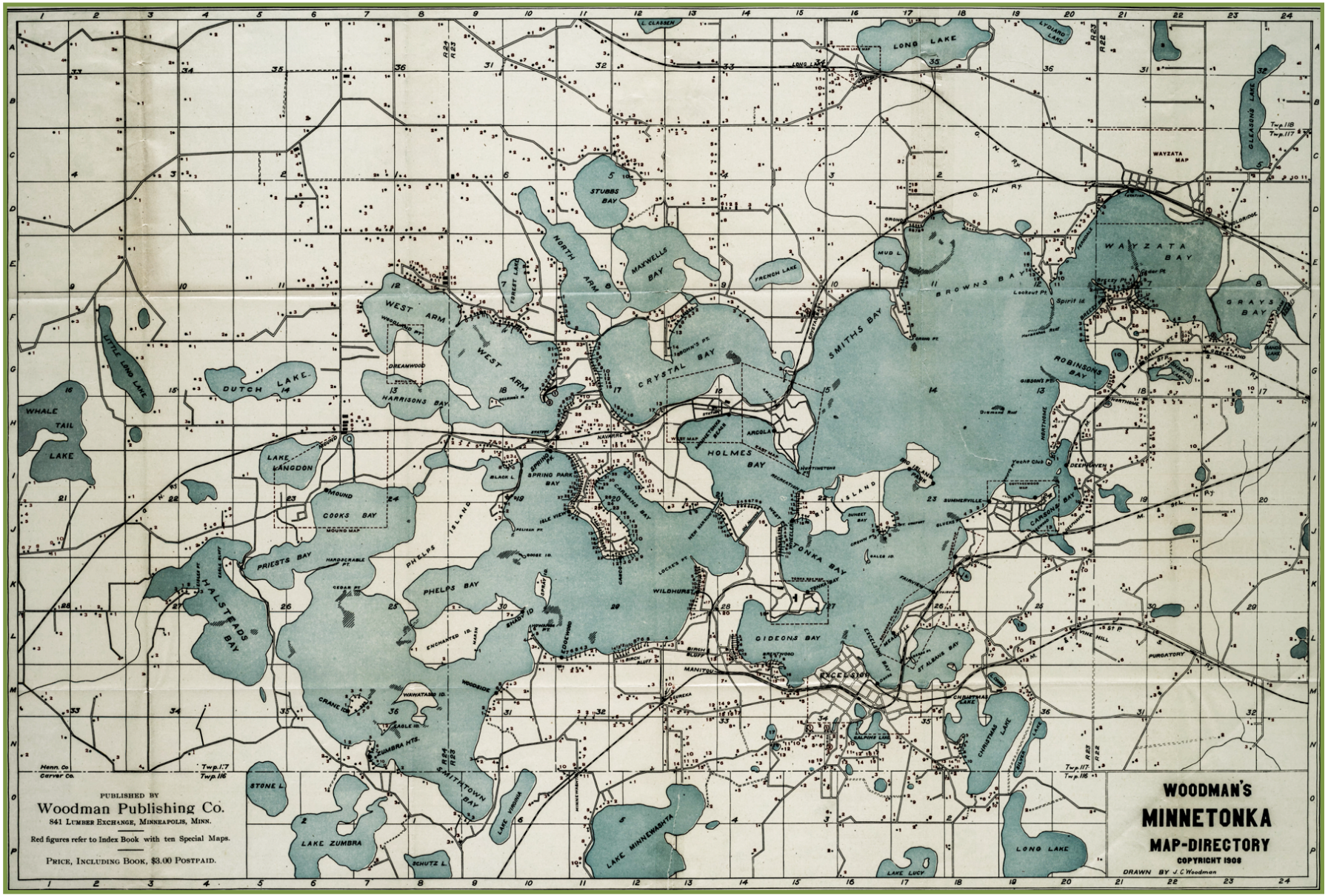
A series of anomalies, prior to their investigation, whose shapes and sizes suggested they were sunken watercraft. Instead, A860, A869, A885, A1026, and A1038 were identified as large rocks or a series of stones.

Vegetation (Anomalies 892, A907)

The sonar signatures of A892 and A907 appeared promising as good targets, with 'sharp' edges, suggesting human-made objects. Anomalies 892 and 907 are large weed clumps.

False Targets (Anomalies 836, 855, 864, 890, 897, 910, 916, 1058)

Anomalies 836, 910, and 864 are boat-shaped targets that appeared to be wrecks; one buried to its gunwales and the other on top of the silt. Instead, A836 and A910 are bottom contours and A864 is a contour and vegetation. Anomalies 855 and 890 are also bottom contours. Anomaly 897's acoustical signature suggested it was a barge-shaped wreck, but it could not be located. The sonar image, upon additional review, indicated that the survey boat hit a wave or boat wake and 'smeared' the recorded image. An anomaly may still be near that location and MHM may revisit this anomaly in the future after additional sonar footage is recorded. Lastly, Anomalies 916 and 1058 have signatures with sharp edges and shapes that strongly suggest human-made objects; further research into these 2 targets is required.



Map of Lake Minnetonka 1908

Conclusion

The LMNA-10 Project produced interesting and significant results, particularly identifying 11 new wrecks, 4 new submerged maritime sites (2 of which are associated with other known archaeological sites), 3 ‘other’ objects, and 19 natural objects or false sonar returns. The number of unknown anomalies identified during the LMNA-10 Project is 37. These wrecks and sites join dozens of other submerged cultural resources already identified in the lake. Comparing and associating these new sites with known sites increases our understanding of the historical context within which these cultural resources operated or were exploited by Minnesotans. For this project, Anomalies 698 and 1039 are particularly on target for this type of association since they are parts of 2 known underwater and maritime sites: the *Minneapolis* Wreck (21-HE-403) and the Big Island Steamboat Pier, Amusement Park, and Veteran's Camp Archaeological Site (21-HE-402).

Firstly, the Dakota Unfinished Dugout Canoe Wreck (21-HE-557) is the only known Native American dugout canoe *in situ* in Minnesota; and one of only 2 known unfinished dugouts in the US[3]. The incomplete nature of the dugout is archaeologically significant because of the amount of useful information that has been accumulated pertaining the construction process: score lines, cuts, axe cuts, and de-barking marks. It is possible the Dakota Unfinished Dugout Canoe Wreck was constructed as early as 1683, but using the the C14 data and relative dating of the site in combination more strongly supports a date range of 1802-1850; she is the oldest wreck on the lake bottom. However, the Lake Minnetonka North Arm Dugout Canoe was constructed around 1,000 years ago, but she is no longer on the lake bottom; she is housed at the West Hennepin History Center in Long Lake.

MHM contends the Steel Wineglass Stern Wreck (21-HE-561) was constructed around 1900 and had a long working life, likely sinking around 1930. She is only the second steel wineglass stern wreck identified in Minnesota; the other site is 21-WA-122 in Forest Lake in Washington County, identified by MHM in 2020. This sophisticated small boat design takes a skilled boatwright to construct; to fabricate an example out of steel requires even more skill. Further, the Steel Wineglass Stern Wreck is the oldest steel wreck on the bottom of lake, followed by the Steel Motor Boat Wreck (21-HE-510) and the Steel Row Boat Wreck (21-HE-530). With the inclusion of 21-HE-561 to the growing number of small steel wrecks on the bottom of Lake Minnetonka, these nautical archaeological sites join others with similar natures in Lake Pulaski, Christmas Lake, Medicine Lake, White Bear Lake, Prior Lake, and Lake Johanna.

Additionally, with the possibility that 21-HE-561 may have been constructed by a Minnesota boat-building company, she is an important link in the State’s metal craft production history. While her manufacturer is currently unknown, 3 metal wrecks also analyzed during the LMNA-10 Project - the Larson Watercraft Seaman Wreck (21-HE-555), the Crestliner Sportsman Wreck 2 (Anomaly 1024), and the Larson Game Warden Wreck (Anomaly 726) - were definitely constructed by Minnesota-based companies. Other Minnesota metal watercraft construction companies represented as

[3]The Wakulla Unfinished Canoe discovered in Wakulla County, FL, is the other known example (Duggins 2017). It is unknown if this artifact was excavated; 21-HE-557 may be the only dugout canoe known that is still *in situ*.

wrecks in Lake Minnetonka include Alumacraft and Lund. Further, the Homebuilt Wood and Steel Composite Wreck (21-HE-562) represents the first of this type yet identified by MHM in any Minnesota lake - basically a wooden boat sheathed in steel. The steel was not applied to the wreck during her life on the water, however; she was constructed that way. All 15 small open boat-style metal wrecks - identified to date - on the lake bottom (not including 3 aluminum canoes) were not only produced by various manufacturers or represent home-builds, they are of different models from each other or carry different attributes from each other, supplying great variety in Minnesota's nautical and underwater archaeological records.

Also from the early 20th Century, the Fast Motor Boat Wreck (21-HE-560) is the largest wooden wreck investigated during the LMNA-10 Project. Additionally, she is the largest wooden personal watercraft so far identified on the bottom of Lake Minnetonka. Several larger wooden wrecks are present on the bottom of the lake, of course, but all of these vessels were used commercially as forms of public transportation, excursion vessels, and working boats such as barges and pile drivers. The Fast Motor Boat Wreck represents a significant 'culture' on Lake Minnetonka during the first 40 years of the 20th Century - that of fast motor boat racing. Important local and national watercraft designers and builders such as Dingle Boat Works, Moore Boat Works, Ramaley Boat Works, Gar Wood, Hackercraft, Chris Craft, and others constructed hundreds of boats with large inboard engines, built for speed. The proliferation of boat racing magazines beginning in the early 1900s attests to the nation-wide interest in producing fast racers that often traveled to regional races, often carrying engines constructed by local firms Westman and Globe. While sailboat regattas were and continue to be regular occurrences, speedboat racing is a thing of the past, ending before World War II. However, speed boat rides were offered at the Excelsior Amusement Park in the 1930s and 1940s; after World War II, the ownership of personal watercraft exploded and regular small boat rides at the Park became redundant.

It is hoped that MHM can determine the identity of 21-HE-560 in the future; 1 candidate currently exists - the *Miss Minnetonka*. On October 6, 1923, O.H. Gray's 'speed launch' *Miss Minnetonka* sank to the bottom of Lake Minnetonka after an explosion of unexplained origin. One woman and 4 men (including Australian actor Snowy Baker) swam toward shore for 40 minutes before being picked up by a rowboat. *Miss Minnetonka* was launched for the first time in Spring 1923. Interestingly, another fast boat owned by O.H. Gray, the *Bluebird*, caught fire and sank in shallow water at a dock on Brackett's Point on August 25, 1923 - 6 weeks before *Miss Minnetonka* exploded and sank (*Minneapolis Morning Tribune* 1923; *Minneapolis Sunday Tribune* 1923). In consideration of the details of *Bluebird's* story, she is not 21-HE-560, and MHM assumes she was raised for parts due to the shallow nature of the water where the wreck burned - 6 feet deep. Unfortunately, at this time, not enough evidence exists to prove the identity of The Fast Motor Boat Wreck.

FIVE SAVED WHEN BOAT EXPLODES IN TONKA

(*Minneapolis Sunday Tribune* 1923)

Smaller wooden wrecks - under 25 feet - investigated during the LMNA-10 Project represent models for different purposes. The Wooden Transomless Wreck (21-HE-556) is a fishing boat, the Wooden Inboard Motor Boat Wreck (21-HE-564) is a pleasure craft

speed boat, the Wooden C-Scow Wreck (21-HE-559) is a racing sailboat, and the Owens Cruiser Deluxe Wreck (21-HE-565) is a small floating house that could feed and sleep several people. All wooden boats, they span the years 1910-1959 in construction and until 1970 on the water. The Wooden Transomless Wreck joins dozens of small wooden wrecks MHM has identified in Lake Minnetonka and nearly every other lake where sonar surveys and underwater archaeology projects have been conducted. The Wooden Inboard Motor Boat Wreck, while representing the pleasure boating and 'boat show' cultures, it also falls into the 'lake accidents' or 'incidents' categories because of the virtual 'falling apart' of the boat beneath the feet of the 2 men on board. And, like the story of the Owens Cruiser Deluxe Wreck, the sinking of 21-HE-564 resulted in a fatality. The Owens accident's 3 deaths is one of the largest casualty numbers in 'modern' history, and the location of the runabout involved in that collision is still unknown. The Wooden C Scow Wreck is the second wooden sailboat identified on the bottom of the lake, the first being the Wooden Sloop Wreck (21-HE-486) that was constructed in the 1890s-early 1900s. The Sloop probably functioned only as a pleasure craft, while the C Scow was constructed to be a racer; although the fiberglassed nature of the Scow suggests she may not have been racing during her latter years.

Another wreck that began her life as a wooden boat, the Homemade Fiberglassed Utility Wreck (Anomaly 1010) appears to have had a long life on the water as an open outboard fishing boat. Then, at some point, she was fiberglassed using large sheets; an obvious home job on an homemade boat. Anomaly 1010 is the 'newest' wreck MHM has identified on the bottom of Lake Minnetonka since she sank between mid-May 2019 and ice-in during the Autumn of 2020. Further, A1010 is the first wreck investigated by MHM where the acoustical sonar signature indicated the watercraft had 'slid' across the lake bottom before coming to rest in its current condition; dive reconnaissance confirmed the sonar evidence. Hopefully MHM can determine if she is a kit boat, and possibly a locally-produced kit such as Taft or Luger, in the future. Two more somewhat 'modern' wrecks identified during the LMNA-10 Project are manufactured from fiberglass: the Fiberglass Sailboat Wreck 2 (Anomaly 856) and the Upright Larson All-American 165 Wreck (Anomaly 884). The second fiberglass sailboat recognized on the lake bottom, poor visibility prevented MHM from identifying the vessel's brand or many details about her beyond her red and white color, and the size and look of the rudder. Contrastingly, MHM can identify most of the attributes of Anomaly 884 because of the previous study of a museum-held example in 2020. The Larson All-American 165 was the best-selling boat in the world during the vessel's heyday in the late 1950s into the 1970s. It is unsurprising that at least 1 of this model of boat has made it to the bottom of Lake Minnetonka. What makes Anomaly 884 archaeologically interesting, however, is the upright nature of the wreck, standing in the water column. She is weighed down/held in place by the large Evinrude Starflite III outboard motor, and possibly assisted by the boat's flotation foam. Anomaly 884 joins 4 other wrecks in the lake that stand up in the water column: the Fiberglass Drag Boat Wreck (Anomaly 23), the Red Fiberglass Wreck (Anomaly 32), the Alumacraft Model A Wreck (Anomaly 462), and the Chris Craft Stinger 260 Wreck (Anomaly 749). One car also stands somewhat into the water column as well. Prior Lake also has a wreck upright in the water column and Medicine Lake has 2 cars imbedded into the lake bottom at 90 degree angles.

As more Minnesota wrecks are documented, the changes in watercraft design and construction will more completely fill-out the maritime historical record. Many of the

smaller craft on the bottom of Lake Minnetonka - including the Dakota Unfinished Dugout Canoe Wreck represent over 220 years of our relationship with historical personal watercraft. When the internal combustion engine began to replace steam-powered boats in the late 19th and early 20th Centuries, watercraft operation by a single person became possible since a boiler operator was no longer necessary. The rapid development of the outboard motor set up the proliferation of personal watercraft, made of wood, steel, aluminum, and fiberglass. The higher speeds attained by internal combustion engines also led to changes in hull design.

Other maritime anomalies identified during the LMNA-10 Project, the Minneapolis Anchor (Anomaly 698) and the Big Island Rubble Pile (Anomaly 1039), enlarge other already-established archaeological sites; MHM contends that more rubble piles will be identified and additional anchors may be discerned in the future. Two other anomalies, the Pontoon (A908) and the Arched Rubber Pipe (A1053) are maritime objects. The Pontoon was part of a pontoon boat or raft, while the Pipe was part of the maritime infrastructure of the lake's shoreline. The Rusty Barrel (Anomaly 731), the Metal Frame (Anomaly 862), and the Aluminum Ladder (Anomaly 898) are among dozens of objects blown into the lake by strong storms or deposited there by the habit of disposing of unwanted objects on the ice or dumped from boats.

The diversity of nautical, maritime, and underwater sites so far identified in Lake Minnetonka are tangible examples of the rich maritime history of the area. Through research, diving on wrecks and anomalies to collect pertinent data, and ensuring that the collected information is accessible by the public, MHM will continue to investigate Lake Minnetonka's submerged cultural resources into the future. As shown by the 7 new wrecks identified by MHM during this project, the continued re-scanning of several sections of Lake Minnetonka is warranted. Comparison of sonar data recorded from different directions and various times during the Spring, Summer, and Autumn have revealed new sites, as well as facilitating the recognition of false targets that do not require reconnaissance using SCUBA. This new data allows MHM to produce smart and efficient dive plans; this will continue into the future. The results of the LMNA-10 Project summarized above is connected to all the work that came before and that will come after its completion. It is clear that the types of sites that exist in Lake Minnetonka are diverse, archaeologically and historically significant, and worthy of great attention. To date, the watercraft located on the bottom of Lake Minnetonka represent nearly 1,000 years of Minnesota's maritime history and nautical archaeology. In the historic period, the known wrecks represented in the lake span over 220 years - and possibly as much as 339 years - of local maritime culture. The data collected during the LMNA-1-10 Projects have been utilized to create the ever-changing Lake Minnetonka Multiple Property Documentation Form, a guide that will be used to nominate Lake Minnetonka's submerged cultural resources to the National Register of Historic Places (NRHP). At this point, the Wayzata Bay Wreck (21-HE-401) has been successfully nominated to the NRHP by MHM. Lastly, the large and significant data produced during the Lake Minnetonka projects has and will be used for comparison purposes as MHM identifies wrecks and maritime resources on the bottom of other Minnesota lakes. To date, these bodes of water include White Bear Lake, Lake Waconia, Prior Lake, Lake Johanna, Medicine Lake, Lake Pulaski, Forest Lake, and Christmas Lake.

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